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Province of Nova Scotia

REPORT OF THE DEPARTMENT OF MINES

1912

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HALIFAX, N. S.
Commissioner Public Works & Mines
King's Printer
1912

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PROVINCE OF NOVA SCOTIA

Report of the
Department of Mines
1912

HALIFAX, N. S.
COMMISSIONER PUBLIC WORKS AND MINES
KING'S PRINTER
1913

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CANADIAN CONSOLIDATED CLAY COMPANY, LIMITED. PICTOU WORKS LOOKING EAST.

DEPARTMENT OF MINES

REPORT FOR THE YEAR ENDED SEPTEMBER 30th, 1912.

To His Honour, The Hon. James D. McGregor,
Lieutenant-Governor of Nova Scotia:—

MAY IT PLEASE YOUR HONOUR,—

I respectfully present herewith to Your Honour, the Annual Report of the Inspector of Mines, containing an account of the progress of mining operations, together with statistical information compiled by him from official and other returns.

I have the honour to be,
Your Honour's obedient servant,
ERNEST H. ARMSTRONG,
Commissioner of Public Works and Mines,

HALIFAX, December 30th, 1912.

REPORT

ON THE

MINES OF NOVA SCOTIA

BY HIRAM DONKIN, C. E.

INSPECTOR OF MINES.

Halifax, N. S., December 31st, 1912

To the Honorable Ernest H. Armstrong, K. C., M. P. P.,

Commissioner of Public Works and Mines.

SIR:—

I have the honor to submit herewith, report on the mines and quarries of Nova Scotia, for the fiscal year ended September 30th, 1912.

The following summary shows, so far as information could be obtained, the Mineral Production of Nova Scotia, for the years ended September 30th, 1911 and 1912.

The demand for departmental drills and the amount of drilling done, have been greater than any previous year.

Nova Scotia Mineral Production.

Year ended September 30th, 1912.

Mineral	Quantity 1911	Quantity 1912
Coal raised (gross tons)	6,208,444	6,802,997
*Iron Ore (Net tons)	53,595	none
Pig Iron made (net tons)	397,615	411,388
Steel Ingots made (net tons)	438,922	461,392
Limestone quarried (net tons)	525,286	473,067
Coke made (net tons)	545,619	603,372
Gypsum quarried (Net tons)	333,358	280,000
Building stones quarried (net tons)	11,226	11,644
Bricks made (number	23,273,700	22,348,486
Drain pipe and tile made (feet)	1,431,761	984,922
Grindstones quarried (net tons)	380	400
Gold bearing ore mined (net tons)	18,320	15,868
Gold produced (ounces)	8,389	4,948
Manganese ore (net tons)	150	233
Antimony concentrates (net tons)	191	none
Moulding sand (net tons)	380	1,190
Tungsten concentrates (net tons)	none	14
Sulphate of Ammonia (gross tons)	3,971	5,213
Barytes		974

*Iron ore imported 1910-1911 853,904. 1911-12, 880,904 net tons.

MINES OFFICE.

Statement of Mines Office revenue for fiscal year ended September 30th, 1912.

SOURCE	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Prospecting License Applications	565.90	403.00	628.50	1,227.00	2,824.40
Lease applications (Gold and Silver)	640.00	124.00	296.00	618.00	1,678.00
Rentals (Gold & Silver)			841.00	9,785.50	10,626.50
License to Search applications	2,190.00	2,040.00	1,830.00	4,200.00	10,260.00
Lease applications (other than Gold & Silver)	200.00	200.00	100.00	800.00	1,300.00
Rentals (other than Gold & Silver)			14,160.00	15,210.00	29,370.00
Gold Royalty	398.04	30.71	120.23	512.62	1,061.60
Coal Royalty	225,127.56	179,168.85	113,096.81	215,766.53	733,159.75
	229,121.50	181,966.56	131,072.54	248,119.65	790,280.25
Fees for the year					908.38
					791,188.63

COAL TRADE.

The returns of coal sold during the year 1912 show, compared with the returns for 1911, as follows:—

	1911	1912
Nova Scotia	2,108,665¾	2,295,363
New Brunswick	541,591	653,938¾
Newfoundland	184,195¼	200,642
Prince Edward Island	80,637	92,302¼
Quebec	2,067,831½	2,159,005
United States	332,301	412,531
St. Pierre	9,024½	9,406¾
Other Countries	1,992	91,825
Bunker	204,681	236,733¾
Time Chartered Boats	25,545	25,867½
	5,556,464	6,177,615

Cape Breton County.

The production for the year 1912 was 5,197,601 as compared with 4,736,026 tons for the year 1911. The largest producers were the Dominion Coal Co., Ltd., with an output of 4,332,320, and the Nova Scotia Steel & Coal Co., Ltd., with an otuput of 821,165 tons.

The reports of Mr. Neil A. Nicholson and Mr. John J. McNeil Deputy Inspector for the Districts of Cape Breton, give, (pages 17 and 52) for their district, detailed information concerning the collieries and their operation.

Pictou County.

The production for the year 1912 was 682,883 tons as compared with 727,944 tons for the year 1911.

The principal producer was the Acadia Coal Co., Ltd., with an output of 439,476 tons.

The report of Mr. Thomas Blackwood, Deputy Inspector, for the Pictou District, gives (page 94) for his district, detailed information concerning the collieries and their operation.

CUMBERLAND COUNTY.

The production for the year 1912 was 632,809 tons as compared with 411,695 tons for 1911.

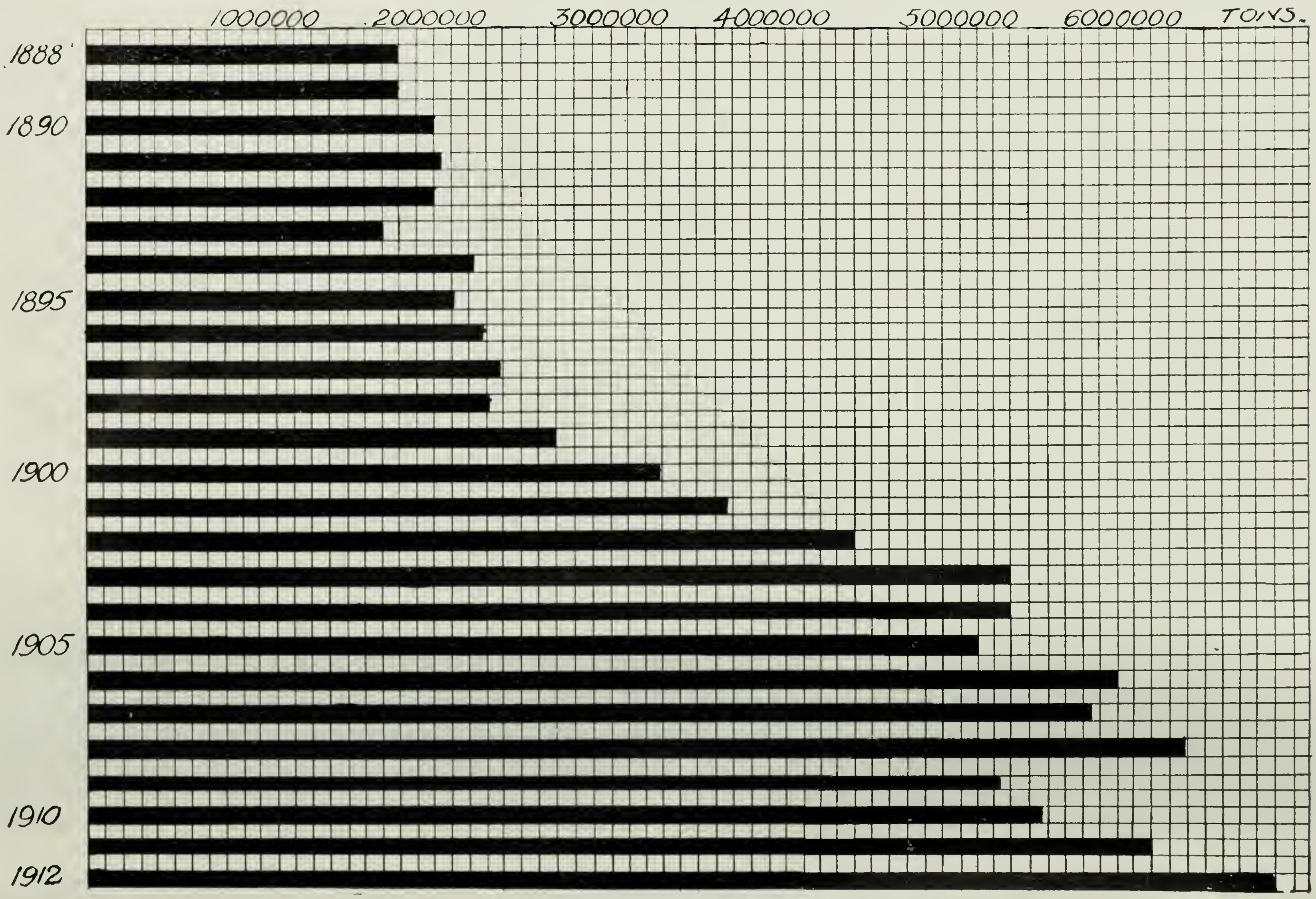
The reports of Mr. A. V. Cameron and Mr. E. B. Paul, Deputy Inspectors, give (page 148) detailed information concerning the collieries and their operation in the Cumberland district.

INVERNESS COUNTY

The production for the year 1912 was 289,704¼ tons as compared with 332,779 tons for 1911.

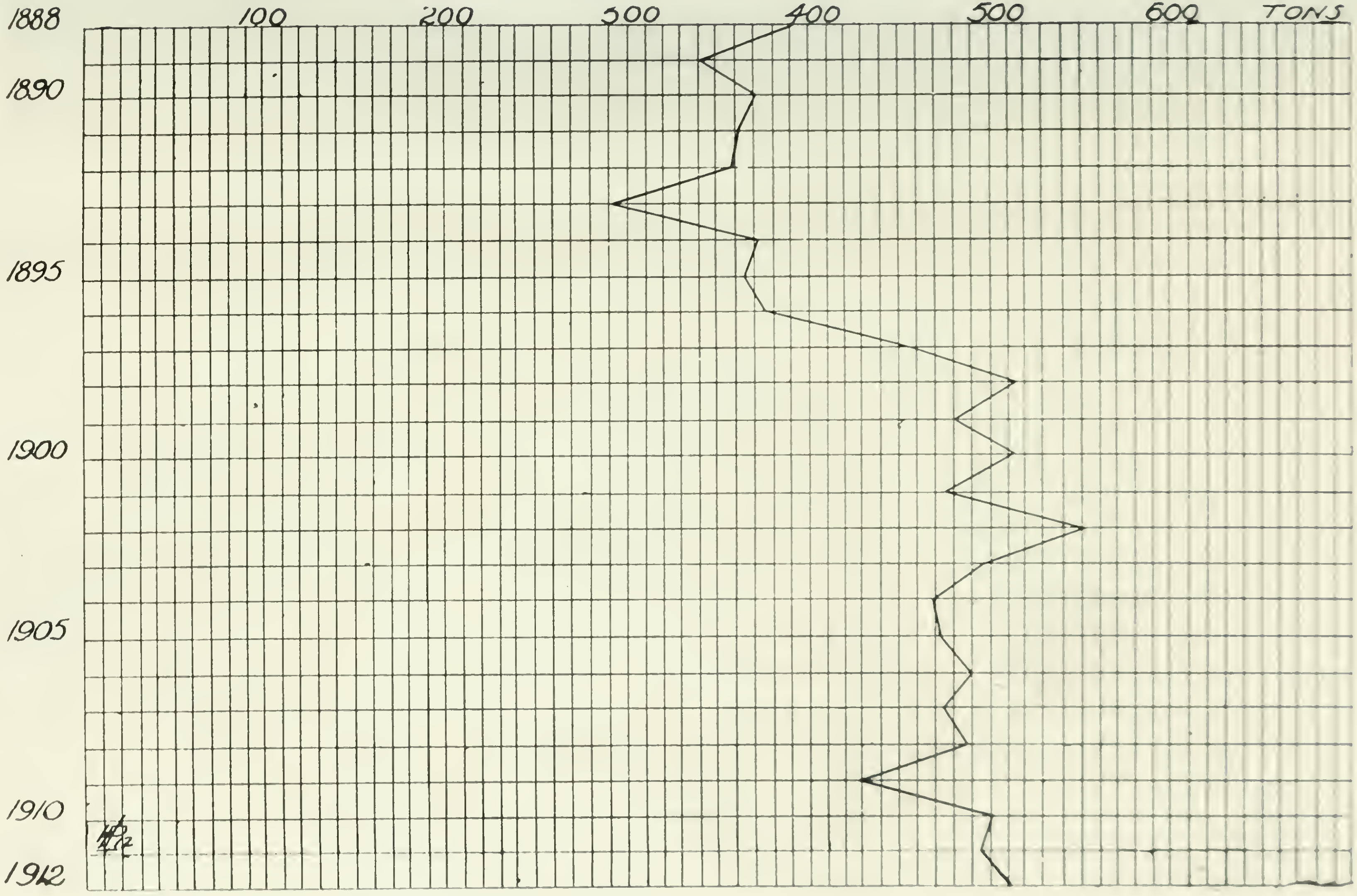
The whole production was by the Inverness Railway and Coal Company.

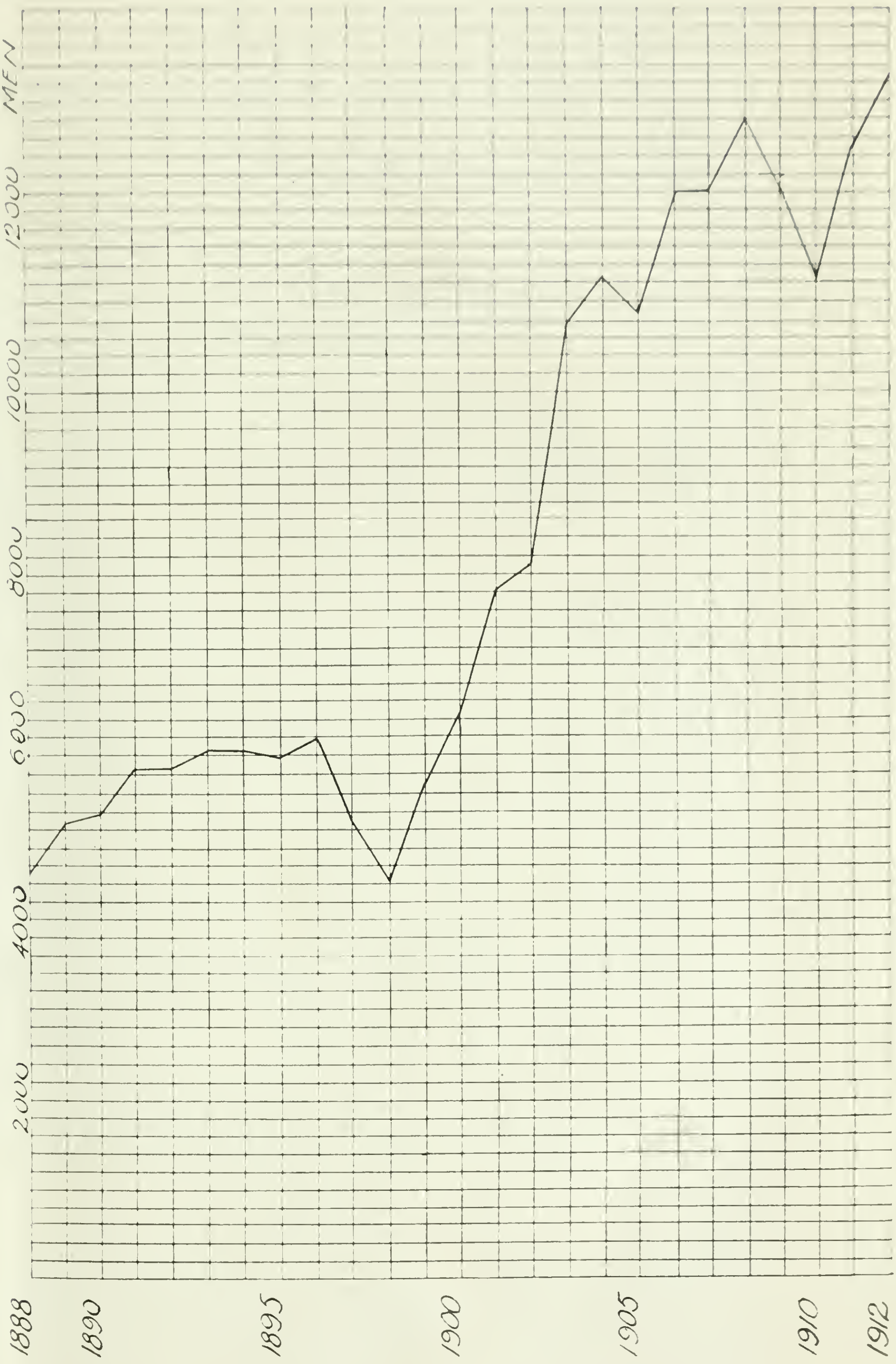
The report of Mr. W. F. Davis, Deputy Inspector for the district of Inverness, gives (page 135) detailed information concerning the Inverness Railway and Coal Company's Colliery and its operation.



PRODUCTION OF COAL IN NOVA SCOTIA 1888-1912

OUTPUT IN TONS PER MAN PER YEAR 1888 - 1912





MEN EMPLOYED NOVA SCOTIA COAL MINES 1888-1912

REPORTS OF DEPUTY INSPECTORS.

Glace Bay, N. S., October 31, 1912.

Hiram Donkin, Esq.,
Inspector of Mines, Halifax, N. S.

Dear Sir:—I beg leave to submit to you the report on the coal mines in the southern district of Cape Breton, for the fiscal year ended September 30, 1912.

I am pleased to report an increased production from all the mines in the district, except No. 3, No. 5, and No. 8. The rooms and narrow work in No. 3 and No. 5, are finished and the production in these collieries, now depends on the extraction of pillars.

Dominion No. 2, Colliery.

This mine is in the town of Glace Bay, in the County of Cape Breton, and is owned and operated by the Dominion Coal Co., Ltd., The bank-head is of steel and is 140 feet high with 12 feet pulleys, and covered with corrugated iron. The bank is equipped with storage tank, four distributing belts, four picking belts, two loading belts and two shaker screens; these belts and screws are driven by a 115 h. p. motor in units of 75 and 40.

The power house is steel frame with brick walls and 2 inch by 3 inch matched spruce roof.

This colliery is operated on the Phalen seam which has a thickness of seven feet and a pitch of four to five degrees.

Main coal shaft.—

From face to face of concrete	11 by 38 feet.
Depth from surface to bottom of sump	907 feet.
Depth from center of pulleys to surface	137 feet.

Phalen coal shaft. Two compartments.

From face to face of timber (each)	10 by 7½ feet.
Depth from surface to bottom of sump	907 feet.
Depth from center of pulleys to surface	137 feet.

Phalen main shaft. Two compartments.

From face to face of timber (each)	10 by 7½ feet.
Depth from surface to bottom of sump	870 feet.
Depth from center of pulleys to surface	80 feet.

The method of working is bord-and-pillar. The condition of the travelling roads is good. The haulage is motor, plane-rope, and horse haulage. The condition of the haulage road is good. The quantity of air in circulation is 228,000 cubic feet a minute, distributed in five splits. The ventilating current is produced by a 24 by 9 feet Dixon fan. The dimensions of the fan drift, 15 by 14 feet, and of the fan shaft, 11 by 15 feet.

Ackroyd & Best safety lamps are used (in use 850) (idle 208). The average quantity of water pumped daily is 105,000 gallons. The following tables give a description of the air pipes and water pipes, and also the number of feet of each.

Low Pressure Lines.

10 inch	8 inch	6 inch	4 inch	2 inch	1 ½ inch
350 feet	8200 feet	13943 feet	14800 feet	26545 feet	21400 feet

High Pressure Pipe.

5 inch	4 inch	3 inch
4000 feet	7500 feet	4100 feet

Water Lines.

5 inch	4 inch	3 inch	2 inch	1½ inch
2900 feet	4200 feet	4200 feet	5200 feet	600 feet

Discharge, and Suction Lines.

8 inch	6 inch	4 inch
500 feet (suction)	700 feet (discharge)	400 feet air pipe to northy pump.

3 inch	2 inch
1600 discharge 300 suction 150 air to pump.	1700 discharge 200 suction

RAILS.

60 ℔	56 ℔	42 ℔	30 ℔	18 ℔
5556 feet	41200 feet	14600 feet	42464 feet	144869 feet

PROPS			BOOMS		
Length	Dia.	Pieces	Length	Dia.	Pieces
7½ feet	8 inches	152	18 feet	8 inches	82
8½ "	6 "	201192	14 "	6 "	230
9 "	6 "	120	14 "	8 "	110
			16 "	8 "	219
			20 "	8 "	51
			12 "	6 "	48
			16 "	6 "	316

Sleepers.

Length	Width of face	No.
6 feet	6 by 5 inches	2385
5 feet	5 by 5 inches	27758

Men Employed.

Surface		Underground		Mining Coal	
skilled	unskilled	unskilled	skilled	skilled	unskilled
52	40	213	169	324	113

Lamps, Powder and Output.

Lamps		Output	Powder	tons coal for
In use	spare	tons	lb	each pound of powder
850	208	798,822	79,455	10.05

Mine Temperature.

South Side 60 degrees North Side 62 degrees.

Date		Barometer	Thermometer (Surface)
October	1911	29.95 inches	48 degrees
November	"	29.78 inches	41 degrees
December	"	29.81 inches	37 degrees
January	1912	29.63 inches	26 degrees
February	"	29.53 inches	27 degrees
March	"	29.85 inches	34 degrees
April	"	29.85 inches	39 degrees
May	"	29.96 inches	49 degrees
June	"	29.22 inches	56 degrees
July	"	29.92 inches	61 degrees
August	"	29.96 inches	60 degrees
September	"	29.99 inches	55 degrees

Machinery erected during the year underground:—

One Flory engine.

South deep:—

One Flory engine, 12 by 15 inches double cylinder, with 2500 feet of ¾ inch rope; hauling coal from south deep.

One engine 8 by 12 inches double cylinder, on No. 1, headway off south Slant, 2600 feet, of ⅝ inch rope.

One Rand engine 8 by 12 inches; double cylinder with 1200 feet of ⅝ inch rope, in south deep sinkings.

North deep:—

One Flory engine 12 by 15 inches, double cylinder, with 2700 feet of ¾ rope.

Marion's deep:—

One Rand engine 8 by 12 double cylinder, 3000 feet of ⅝ rope.

No. 4, headway, north side:—

One Jenckes engine 8 by 12 inches, double cylinder with 2400 feet of ¾ rope,

Main south headway:—

One Flory engine double cylinder, 5000 feet of 7-8 inch rope.

No. 2, headway south:—

One Jenckes engine 9 by 12 inches, couble cylinder, 2000 feet of ¾ inch rope.

Locomotives underground:—

Two Baldwin air	locomotives	20 tons each	11 by 14 inches
One " "	"	17 tons "	10½ by 14 inches
Three Porter air	"	17 tons "	10½ by 14 inches
One " "	"	10 tons "	7 by 14 inches
One " "	"	7 tons "	7 by 12 inches

Pumps underground:—

One Northey pump	20¼ by 8 by 24 inches
One Cameron (potvalve)	7 by 5 by 12 inches
Two Northey	7½ by 4½ by 10 inches
One Cameron	7 by 4 by 12 inches

There has been a water line laid from the main line at the bank, head to the lamp cabin, blacksmith shop, and carpenter shop, and a new hydrant placed beside the blacksmith shop, with hose connections on water lines in each of the buildings, for protection against fire. The fire fighting apparatus is in good condition, and the brigade is well trained. The apparatus includes 2000 feet of rubber hose, 5 branch pipes, 1 duplex fire pump, 14 by 7 by 12 inches; eight hydrants in and around the yard (town pressure), twelve ladders from 15 to 25 feet long

Improvements to haulage roads:—

No. 1 level, north deep was driven 1400 feet with 30 ℔ rails, and two new landings started: 800 feet of 30 ℔ rails were laid on No. 1 headway off the south slant, and one new landing started.

No. 1 landing on the south level was driven 300 feet and 56 lb rails laid: 1200 feet of 30 lb track was laid in south deep and two new landings started: 30 lb rails were laid in No. 1, north deep.

There has been a new Walker fan erected for the purpose of ventilating No. 2 and No. 9 collieries, situated 265 feet from No 2 air shaft, and 106 feet from No. 9 air shaft. The air tunnel is built of concrete; it is 13 feet 3 inches wide, by 13 feet 3 inches high. The fan is driven by a Walker engine, corliss type, 30 by 48 inches, driving-wheel on fan 20 feet in diameter. Fan wheel 10 feet in diameter, with eleven 1¾ inches cotton ropes.

There was a new coal handling plant erected at No. 2, for the purpose of supplying the boilers with coal: it started on October 11th, 1911: it was built by the Babcock and Wilcox Co., Ltd., the conveyor is of the tipping—tray type, and has a capacity of 100 tons an hour.

Development:—

No. 1	north deep	850	feet
	south deep	550	“
2	north deep	1000	“
2	Headway south slants	500	“
1	“ “ level	975	“
2	“ “ “	440	“
Main south level		300	“
No. 2	level, north deep	645	“
2	headway No. 2 level north deep	350	“
1	level north deep	775	“
5	headway No. 1 level north deep	285	“
4	“ “ “ “	615	“
3	“ “ “ “	400	“
2	“ “ “ “	200	“
1	“ “ “ “	665	“
1	level south off south deep	215	“
1	“ north “ “ “	175	“
1	“ south “ No. 1, north deep	75	“
1	“ north “ “ “ “ “	170	“

Surface machinery:—

One Dixon hoisting engine 34 by 48, inches double conical drum, 18 by 12 feet diameter and, width 5 feet.

One Dixon man-engine 24 by 42 inches, with double conical drum 18 by 12 feet diameter, width 5 feet.

Two fan engines, Dixon corliss, 20 by 42 inches.

One exhaust turbine engine, 1000 killowatts, 1500 revolutions

One motor, 20 h. p., running loading belts.

One motor, 75 h. p. 480 revolutions running screen and picking belts.

One Walker air compressor, steam end 31 by 57 by 60 inches air end, 51 by 32 by 60 inches, capacity 6300 cubic feet a minute.

Three Rand air compressors—steam end 20 by 36 by 48 inches air end 32 by 20 by 48 inches, capacity 3000 cubic feet a minute.

Two Norwalk high pressure compressors—steam end 20 by 38 by 36 inches; air end 23 by 16 by 8 by 36 inches, capacity, 1380 cubic feet a minute.

Three Goldie electric engines—20 by 40 by 36 inches; capacity 350 killowatts.

Two ideal electric engines—12 by 12 inches, capacity 75 killowatts.

One Worthington duplex pump—14 by 12 by 10 inches, 800 gallons a minute.

One Smithdale duplex pump—16 by 12 by 12 inches, 800 gallons a minute.

The ropes in the coal shafts and main shafts are 1 $\frac{5}{8}$ inches. in diameter.

Officers.

A. S. McNeil, manager

W. S. McDonald, under-ground manager

John Murphy, overman

Malcolm McNeil, overman

Michael Steele, overman

Ronald McDonald, overman

Peter Morrison, overman

J. A. Ferguson, chief engineer

DOMINION NO. 3, COLLIERY.

This mine is in the Phalen seam, in the town of Glace Bay, and is owned and operated by the Dominion Coal Co., Ltd., the pitch of the seam is 4 degrees and 40 minutes.

The bank-head is of wood, and is equipped with an up-to-date screening plant. The mine is entered by means of a slope driven from the outcrop of the seam to the barrier separating

Dominion No. 2, mine from this mine. The slope is 9563 feet long, and has an average width of 12 feet, average pitch 4 degrees the slopes are kept in good condition. The seam is worked on the bord-and-pillar system; the coal from rooms and narrow work is mined by machines, and the coal from the pillars is mined by hand.

The development work of this mine is completed, except 180 feet of headway on No. 19, west which is the lower lift. Both levels were driven to the barriers; the west side separating Dominion No. 5, from this mine; the east separating Dominion No. 4 from this mine. The west level was driven 500 feet this year, and the headways were driven 200 feet. The east side level was driven 500 feet. The west back-slope is kept in good condition for traveling slope. The main slope is the haulage slope, and is doubled tracked. The coal is taken from the landings underground to the tipple on the bankhead by endless haulage: there are 28000 feet of 1 ⅛ wire rope in use for this purpose; there are 80,000 cubic feet of air in circulation a minute, produced by a Capell fan 13½ by 7½ feet, directly connected to an induction motor 25 cycle 100 h. p. (electric) and has 2.4 inch water gauge. The air is split at the botton of the slope, 35000 cubic feet goes to the west side, 45000 cubic feet goes to the east side. The fan is placed over the shaft; the shaft is 30 feet deep, and has an area of 100 square feet. Ackroyd and Best safety lamps are used; average number in use daily 154. There are 240 of these lamps kept in readiness. The quantity of water pumped daily is 280,000 gallons. Compressed air for mining machines and pumps is conveyed to the mine through pipes—of which the following are the dimensions of the different kinds.

Air line.

Diameter	Inches	Length in feet.
“	8	13000
“	4	2000
“	2	2000
“	1½	3000

Water line.

Diameter	inches	Length in feet
“	6	1300

This mine is fairly damp and no sprinkling is necessary. The air pipes coming into the mine are connected at surface with the main water supply and can be used as a means of fighting fire in the mine. There are standard hose connections along the main air line 500 feet apart.

The stables underground and all the landings are supplied with fire kings, and are examined daily and kept in readiness. The stables are also supplied with 2 inch pipe and connections, to a pump nearby.

Surface machinery.

Three B. & W. boilers	318 h. p. each
One Mumford boiler	100 h. p.
One Mumford boiler	90 h. p.

One Walker compressor capacity 60,000 cubic feet a minute, steam high pressure cylinder 31 inches low press steam 57 inches, air high pressure cylinder 32 inches, low pressure air 51 inches, stroke 60 inches.

Haulage engine	22 by 42 inches
Screen engine	12 by 34 inches
Fan	13½ by 7½ inches
Fan engine	18 by 18 inches

This engine is not in use since the motor was placed.

The fire fighting apparatus consists of one hose-cart, and 1200 feet of 2 inch standard hose, with hydrants at convenient points surrounding the plant; also fire-kings in all colliery buildings.

Average temperature for each month on the surface, and in the mine is as follows:—

	Surface	Mine
October	55 degrees	50 degrees
November	40 "	50 "
December	25 "	49 "
January	22 "	50 "
February	26 "	50 "
March	31 "	50 "
April	42 "	49 "
May	55 "	50 "
June	57 "	51 "
July	71 "	50 "
August	66 "	51 "
September	49 "	51 "

Rails in use in the mine:—

56 pounds	8000 feet
30 "	17000 "
18 "	21000 "

Underground machinery.

One 7 by 14 by 12 inch pump in a large lodgement below No. 18 levels. This pump is discharging all the mine-water into the No. 4 mine.

The production last year was 130,059 tons. To produce this 11198 ℔ of monobel powder were used, or 11.5 tons of coal mined for each pound of powder.

Officers.

Neil A. McDonald, manager
John R. McNeil, underground manager
Joseph Mann, overman
R. J. Wilton, chief engineer

Average number of men enployed underground 152

Average number of boys employed underground 2

Average number of men employed on the surface 47

DOMINION NO. 4, COLLIERY.

This mine is situated at Caledonia in the town of Glace Bay in the County of Cape Breton, and is owned and operated by the Dominion Coal Co., Ltd.

The out-put for the year was 418,784 tons.

To produce this amount of coal there was 59017 ℔ of explosives used or 7.09 tons of coal got for each pound of explosive used.

Rails in Mine.

18 ℔	5165 feet
30 ℔	3633 feet

The pipes used in the mine for the year are as follows:—

Diameter	feet
1½ inches	400
2 “	300
4 “	400
6 “	2398
8 “	240

There are 100,000 cubic feet of air in circulation, with a w. g. of 3 inches. The east deep haulage was extended 1200 feet and was laid with 30 ℔ rails.

Surface Machinery.

One hoisting engine 20 by 48 inches.

One man-engine 18 by 24 inches.

One pumping-station engine 20 by 42 inches.

One lamp cabin engine 4 by 6 inches.

One box-car loader engine 10 by 14 inches.

One engine 22 by 42 inches.

One compresser, steam cylinder 20 by 36 by 48, air 20 by 32 by 48, inches.

One compressor, steam cylinder 22 by 38 by 48, air 22 by 36 by 48 inches.

One fire pump 14 by 9 by 12 inches.

Two feed pumps 7½ by 4½ by 10 inches.

One small engine (machine shop) 4 by 6 inches.

One saw-mill engine 8 by 24 inches.

One Dixon fan engine 18 by 36 inches.

One Murphy fan engine 11 by 20 inches.

One screen-engine 12 by 34 inches.

Seven batteries of B. and W. boilers 1773 h. p. Three tubular boilers at pumping station 225 h. p.

Underground machinery.

Two small main-and-tail rope engines. One McDougall turbine pump, capacity 420 gallons a minute. One Aldrich five-throw pump, capacity 600 gallons. One Guynne pump 250 gallons a minute. These pumps are operated by electricity.

One cameron pump, capacity 300 gallons a minute.

Four small Knowles pumps.

One small Northy pump. These are operated by compressed air. The average quantity of water pumped daily from this mine is 1,148,320 gallons.

Fire protection.

The air pipe into the mine is 8 inches in diameter, and has branch lines from 6 inches to 1½ inches. These air lines can be converted into a water line when required for sprinkling or in the case of fire in the mine, The mine is fairly damp, except in few places: care is exercised in getting all the coal filled from along the roads, and the places are watered when considered necessary. The average barometer reading in the mine for the year was 30.40 inches, and the average temperature 56 degrees.

Narrow work for year ended September 30, 1912.

East deep.	Gravity plane 730 feet
6 east levels	200 stopped
7 “ “	500
8 “ “	600
9 “ “	550
10 “ “	100
11 “ “	1100
10 west “	420
Main deeps	950
West deep	850 stopped
8 east level	280
9 “ “	430
10 west “	350

Officers.

John Casey, manager

Alex. Matheson, underground manager

Richard Dinn, assistant underground man.

Andrew Lynk, overman

Thomas Scott, overman

J. H. Morrison, chief engineer

DOMINION NO. 5, COLLIERY.

This colliery is situated at Reserve in the County of Cape Breton, and is owned and operated by the Dominion Coal Company, Limited, The bank head is of wood. The screening plant is of a modern pattern, consisting of four sets of shaker screens having three screens to a set; first a two-inch screen, under which is a one and one-half inch screen, and lastly a three quarter inch screen. The coal is conveyed from the screens by picking belts, each about forty feet in length, and is delivered by two loading belts from which the cars are supplied. This machinery is electrically driven, power being conveyed from Dominion No. 2 colliery at a voltage of 6,600 which is transformed here to 550 and 110 volts for motors and lighting purposes.

This mine is on the Phelan seam. The average thickness, 7¾ feet, and has a pitch of 4 degrees and 30 minutes. The coal is taken from the mine by means of slopes starting from the out-crop, and driven through the seam a distance of 11,000 feet to the barrier separating Dominion No. 2 mine from this one. The slope is eleven feet wide and has a pitch of 4 degrees and 30 minutes. The seam is worked on the bord and pillar system: rooms 20 feet wide, and pillars from 30 to 40 feet, according to cover. The coal in the rooms and narrow works is mined by machines, and the coal from pillars is mined by hand.

All the rooms and narrow work in this mine are finished, and the out-put now depends upon the extraction of pillars. The pillars in number 10, south have all been drawn to the deep-barrier. Number 11 south levels, total distance 1,250 feet, of which 150 feet were driven this year. No. 11 north levels are now in 800 feet, driven during the year.

Quantity of air circulation is 200,000 cubic feet a minute, produced by two fans, a Guibal 24 feet in diameter, and a Challoner 15 feet in diameter. The drift of the Guibal fan has an area of 105 square feet, length of drift 35 feet. Challoner fan drift has an area of 100 feet. The w. g. of the Guibal fan is four-tenths of an inch, and for the Challoner fan 1.5 inches. The Guibal fan is connected by transmission ropes 112 feet long: the wheel on the fan is 12 feet, and on the engine 5 feet in diameter. The Challoner fan is connected direct to the engine.

Employees.

Hand pick miners	120
Machine miners	8
Shearers	3
Machine helpers	8
Loaders	16
Day laborers	130
Men employed on surface	52
Total	337

Surface machinery.

One corliss haulage-engine 28 by 60 inches, one Atlas engine 16 by 22, one Atlas engine 9 by 14, one Robb-Armstrong engine 18 by 22, two Rand compressors, capacity 2,500 feet a minute each, one Walker compressor, capacity 2,500 cubic feet a minute, one Northey duplex pump 14 by 7 by 13 for fire purposes, a Knowles pump 14 by 8½ by 12 inches, seven B. & W. boilers 1,878 horse power, fitted with Parsons forced-draft blowers, and fed with two Knowles duplex outside-packed plunger-pumps, 10 by 6 by 12 inches.

Underground machinery.

One Cameron pump 14 by 7 by 18 inches, one Cameron pump 14 by 9 by 33 inches, one Knowles 16 by 7 by 10 inches, one main-and-tail-rope engine 14 by 20 inches, one Flory engine 14 by 20 inches, two turbine pumps, operated by electricity.

Improvements to haulage roads.

A haulage road 3,500 feet in length from the French slope to the East slope was laid with 56 pound rails. This road is to convey the coal from the upper section of the east slope to the French slope, from this point it is taken to the surface by the endless-haulage. There have been no new rails supplied to this colliery for the year.

Officers.

W. C. Ross, manager

J. A. McDonald, underground manager

Mark Petrie, overman

R. McCormack, overman

David Guthro, overman

Thomas Hickey, chief engineer

DOMINION NO. 6, COLLIERY.

This mine is on the Phelan seam, near McRae's Point, on the southern side of Glace Bay, in the county of Cape Breton. It is owned and operated by the Dominion Coal Company, Limited. This seam is entered by means of slopes, driven from the outcrop and is down 4,850 feet, 12 feet wide and 6½ feet high. Having a pitch of seven degrees. The mine is worked on the bord-and-pillar system. In the land area the rooms are twenty feet wide and the pillars are fifteen feet thick. The undersea-rooms are twenty feet wide, and pillars thirty feet thick. The size of the pillars is increased in thickness, according to the thickness of the cover. The coal in rooms and narrow works is mined by machines.

Advance of Narrow work.

No. 1 west level 350 feet.

No. 5 west level 815 feet.

Sixth headway off 5 west level 665 feet.

Seventh headway off 5 west level 325 feet.

No. 6 west level, 1350 feet.

Fourth headway off No. 6 level 670 feet.

Fifth headway off of No. 6 west level 200 feet.

No. 7 west level 780 feet.

No. 1, headway off of 7 west level 280 feet.

Main deeps, 760 feet.

The quantity of air in circulation is 54,000 cubic feet a minute with a w. g. of .7 of an inch.

The output for the year was 269,658 tons. To produce this amount of coal there were 54,203 pounds of bull-dog powder used, or 4.9 tons of coal for each pound of powder used.

There were 7,600 feet of 60 ℔ rails and 30,520 feet of 18 ℔ rails used during the year.

Number of feet of pipe used for the year.

Diameter	Length in feet
4 inches	2079
3 "	400
2 "	9515
1½ "	7944
1 "	60

Haulage Underground

There are fifteen engines placed in this mine. The haulage on the headways, levels, and deeps, is mechanical, and in the rooms, horses are used.

Pumps underground.

One Cameron pump 16 by 8½ by 33 inches.

One Northy duplex pump 30 by 8 by 24.

The engines and pumps are driven by compressed air.

Surface machinery.

One Jenckes engine 26 by 58 inches.

Two Walker compressors 3,500 cubic feet a minute, capacity.

One Knowles pump capacity, 500 gallons a minute. This pump is for fire purposes.

Six B. and W. boilers, 1,500 h. p., with Parson forced-draft blowers

Colliery buildings and bank head.

	Length	Width	Height
Boiler house	167 ft. 10 in.	43 ft. 10 in.	21 ft. 10 in.
Compressor house	93 ft.	65 ft.	30 ft.
Lamp house	33 ft. 8 in.	15 ft. 8 in.	9 ft.
Warehouse	48 ft. 6 in.	30 ft.	17 ft.
Wash house	60 ft.	30 ft.	12 ft.
Machine shop	48 ft. 6 in.	65 ft.	30 ft.

There are employed 357 men and 8 boys.

Improvements underground.

A main-and-tail-rope engine was erected on number 4 and 5 west levels, which is hauling coal from these levels to the slope haulage.

The only addition to the colliery buildings, was a first class stable, built to replace the old one.

Officers.

J. C. Mitchell, manager

Harry Wilson, underground manager

James McCuish, overman

James Smith, chief engineer

DOMINION NO. 7, COLLIERY.

This mine is in the Hub seam, the top seam of the Glace Bay basin. It is owned and operated by the Dominion Coal Company, Limited. The bank head is of hard pine, length 120 feet, width 30 feet, single boarded and battened, with tar roof.

Bank-head machinery.

One man cage; two dumping hoisting cages; two conveyor belts, length 14 feet, width 3 feet: two sets of shaking screens, three screens to a set. Two picking belts, length 41 feet, width 5 feet. One loading belt length, 35 feet, width 3 feet, 6 inches. All bank machinery is electrically driven by two 75 h. p. Allis-Chalmers Bullock motors. Coal hoisting pulleys 12 feet in diameter; man cage pulleys 6 feet in diameter.

Colliery buildings.

	Length	Width
Engine house	80 feet	35 feet
Fan engine house	25 "	10 "
Boiler house	65 "	50 "
Banking station engine house	35 "	30 "
Black smith shop	35 "	30 "
Carpenter shop	35 "	30 "
Warehouse	50 "	30 "
Lamp house	35 "	15 "
Wash house	80 "	18 "
Fan house	42 "	27 "

The seam is nine feet thick, with a stone parting of considerable thickness. The top part of the seam is now being worked which averages about five feet thick. Owing to the thickness of the stone parting, it is practically impossible to work the lower part of the seam.

Hoisting Shaft.

Shaft is 126 feet deep, 20 by 10 feet. The man-cage runs in a compartment of the coal shaft, 10 by 6 feet.

Narrow work:—

No. 3 south upper level 560 feet; number 3 south lower level 430 feet. This level is stopped.

No. 2 headway off No. 3 south level 330 feet.

No. 3, headway off No. 3 south level 120 feet.

No. 4 south first headway 350 feet.

No. 5 south level 630 feet.

No. 6 south level 700 feet.

No. 4 north level 880 feet.

No. 3 headway off 4 north level 360 feet.

No. 4 headway off 4 north level 265 feet.

No. 1 deeps, 225 feet.

No. 2 deeps 425 feet.

No. 5 north level 550 feet.

First headway off No. 5 north level 160 feet.

No. 6 north level 780 feet.

First headway off No. 6 north level 280 feet.

Booms are used throughout the mine. In narrow places, the booms are hitched into the rib; in rooms one end is hitched, and an upright prop under the other end. Sometimes props under both ends. The stoppings are of cement, board and brattice cloth, and are kept in good condition, and well up to the faces.

Endless haulage on the main deep. Plane rope haulage from the sinkings to the endless haulage. There was a main-and-tail-rope engine placed to haul the coal from No. 4 north level section to the endless haulage. The endless haulage was extended 820 feet, and two new landings started. A Rand single-drum engine, 8 by 12 inches was placed at the top of No. 2 deep, hauling coal from this deep.

Average temperature for each month on the surface and in the mine:—

1911 and 1912	Thermometer on Surface	in Mine
October	42 degrees	52 degrees
November	37 "	52 "
December	32 "	52 "
January	17 "	52 "
February	20 "	50 "
March	26 "	52 "
April	33 "	52 "
May	44 "	52 "
June	53 "	54 "
July	60 "	55 "
August	58 "	55 "
September	52 "	55 "

Fire protection:—

Hydrants, connected with the town water system, are placed at convenient points in the colliery yard. There is a 4 inch pipe laid from the main water line down the shaft to the pit bottom and to the stables, with standard hose connections. It is also connected with the main air line and can be used in case of fire in the mine. The surface buildings, pit-stables and landings are supplied with fire-king extinguishers, which are examined at regular intervals and recharged. This colliery has an organized fire-brigade and is well equipped with fire fighting apparatus.

Surface machinery:—

One hoisting engine, Jenckes, 54 by 42 inches, first motion Corliss valve, diameter of drum 8 feet 6 inches.

One man-cage engine 18 by 26 inches, Matheson & Co., first motion, diameter of drum 6 feet.

Two Norwalk compressors, compound steam end 20 by 34 inches, air-end 19 by 30 inches, capacity 2,000 cubic feet a minute.

Fan engine, 12 by 15 inches, Robb-Amrstrong, 100 h. p.

Banking-station engine, first motion, loose drum, made up asfollows: right hand engine a Jenckes, 18 by 36 inches, left hand engine a Matheson & Co., 18 by 36 inches.

One feed pump 7½ by 4½ by 10 inches.

One duplex Knowles pump 14 by 7½ by 12 inches.

One Northey duplex circulating pump, 5½ by 3½ by 6 inches.

One vacuum feed-water heater.

One Wagner motor, one-half h. p.

One Canadian manufacturing motor 2½ h. p.

There are 60,000 cubic feet of air in circulation. It is divided as follows: 24,000 cubic feet going to the south side of the mine, and 36,000 going to the north.

Employees underground:—

Skilled workmen	174
Laborers	125
Boys	6

There were used during the year, 32,162 feet of 18 ℔ rails and 2515 feet of 30 ℔ rails.

Officers.

P. T. Pendergast, manager.

W. T. Chew, underground manager.

Dan McMullin, overman.

Murdock Morrison, overman

W. A. Baird, chief engineer

William Burke, surface foreman

Dominion No. 8, Colliery.

Dominion No. 8 Colliery is at Bridgeport in the town of Glace Bay, Cape Breton, and is owned and operated by the Dominion Coal Co., Ltd.

The bank head is of wood, and of the old type, having the ordinary bar screen, and old fashioned cages.

The Colliery buildings are of wood and of the following dimensions:—

Boiler house	40 by 50 feet
Carpenter shop	28 by 34 feet
Warehouse	20 by 31 feet
Machine shop	38 by 41 feet
Haulage and hoisting engine house	60 by 35 feet
Wash house	32 by 60 feet

This mine is on the Harbour seam, height of coal 5 feet. Pitches 4 degrees 30 minutes. The shaft is 6 feet by 14 feet, 80 feet deep.

The mine is worked on the bord-and-pillar system; al the coal mined by hand.

Total distance driven in levels	3200 feet
" " " " deeps	1100 feet

There were 260 Marsaut lamps in use, and 40 available.

There were 31343 ℔ bull dog powder used.

There were 250 men employed in mine.

There were 64 men employed on surface.

There were 2 boys in mine.

There were 3 boys on surface.

Traveling ways in the mine are kept in safe condition.

The endless haulage system is in use at this colliery on levels and deeps; the haulage roads are kept in good condition; there is a 1 inch rope 18,000 feet long in use.

There are 54,000 cubic feet of air a minute, in circluation, produced by a Murphy fan, 8 feet in diameter; belt driven, w. g. 3 inches. The fan shaft is 80 feet, and 10 feet in diameter.

The ventilation is one continuous current.

The fire protection is a 2 inch water-pipe leading from the main water supply on the surface to pit bottom and stables with standard hose connection at regular intervals; and also fire kings at pit-bottom and at all landings. This mine is very damp no sprinkling required. No gas has been detected for the last year. The average barometer reading in the mine is 29-40 inches: the average thermometer reading is 51 degrees under ground.

The number of men employed underground is 263, on surface seventy-four.

The output was 176,735 tons; to produce this amount of coal 34,928 ℔ of bull dog powder was used, 5.06 tons for each pound of powder.

Rails in Mine.

19,200 lineal feet of 30 ℔,
7,300 lineal feet of 18 ℔.

Surface machinery:—

One winding engine, 16 by 30 inches, drum 6 feet.

One bank engine, 9 by 16 inches, drum 20 inches.

One engine (machine shop) 7 by 9 inches.

One endless haulage engine, 18 by 36 inches.

One fan engine, 9 by 12 inches.

One Knowles pump, 14 by 7 by 12 inches, (for fire purpose).

One Northey feed pump, 6 by 10 inches.

One Northey feed pump, 4 by 10 inches.

One electric motor.

Two Ingersoll return tubular-boilers, 50 h. p. each. Two B & W boilers of 212 and 318 h. p.

Underground machinery:—

Two turbine pumps kept for emergency purposes in case of accident to water hoist.

Officers.

W. R. MacDonald, manager

Robert Crosby, underground manager

D. K. McDonald, overman

Angus McCuish, overman

Dan McNeil, chief engineer.

DOMINION NO. 9, COLLIERY.

This mine is owned and operated by the Dominion Coal Co., Ltd., and is situated in the town of Glace Bay, in the county of Cape Breton.

The following improvements have been made, the past year:—

Ventilation.

An overcast has been built at the top of the north angle-deep and a new aircourse has also been made in connection with it. This gives the angle deep and the north deep workings, separate splits: there has also been an overcast built on the north headway aircourse, and twelve concrete stoppings built along this aircourse. The concrete stopping from No. 3 to No. 4 levels, on the north angle deep, has been extended.

The tail-rope haulage on No. 1 level, north deep, has been extended 700 feet. A haulage road has been built and an engine has been erected in No. 4 headway on No. 1 level north deep. The tail-rope haulage on No. 2 level north deep has been extended 1500 feet. The north angle-deep haulage-road has been extended from No. 3 to No. 4 levels a distance of 800 feet. There has also been a new engine erected in No. 4. level south, off north angle-deep, to handle the coal from a new lodgement which is being driven. The main south-deep haulage has been extended 600 feet. The new engines placed, are Rand haulage-engines 8 by 12 inches, single drum. The 6 inch air-line on the north angle, has been extended 1500 feet.

Development Work:—

Narrow work driven from September 1911. to October 1912:—

Place.	Location.	Distance driven
North angle deep	north side	main 380 feet
North angle deep	north side	back 375 feet
No. 1 level north	north deep	main 520 feet
No 1 level north	north deep	low 530 feet
No. 5 headway No. 1 level north	north deep	main 600 feet
No. 5 headway No. 1 level north	north deep	back 600 feet
No. 7 headway No. 1 level north	north deep	main 660 feet
No. 7 headway No. 1 level north	north deep	back 645 feet
No. 4 headway No. 1 level north	north deep	main 150 feet
No. 4 headway No. 1 level north	north deep	back 150 feet
No. 2 level north deep	north deep	high 280 feet
No. 2 level north deep	north deep	low 425 feet
No. 8 headway No. 2 level north	north deep	main high 368
No. 8 headway No. 2 level north	north deep	back 345 feet
No. 2 level north	north angle deep	high 670 feet
No. 2 level north	north angle deep	low 895 feet
No. 1 headway No. 2 level north	north angle deep	main high 305 feet
No. 1 headway No. 2 level north	north angle deep	Back headway 380 feet
pump-house levels	north angle deep	high 365 feet
pump house levels	north angle deep	level 380 feet
No. 4 level south	north angle deep	high 950 feet

place.	location.	distance driven.
No. 4 level south	north angle deep	level 870 feet
No. 3 level south	north angle deep	high 285 feet
No. 3 level south	north angle deep	level 265 feet
No. 2 headway No. 4 level south	north angle deep	main headway 450 feet
No. 2 headway No. 4 level south	north angle deep	back high 455 feet
No. 3 headway No. 3 level south	north angle deep	main headway 455 feet
No. 3 headway No. 3 level south	north angle deep	back high 455 feet
No. 1 headway No. 4 level south	north angle deep	main headway 390 feet
No. 1 headway No. 4 level south	north angle deep	back high 390 feet
No. 1 headway No. 4 level south	north angle deep	main headway 390 feet
No. 1 headway No. 4 south level	north angle deep	back high 390 feet
No. 2 headway No. 3 level south	north angle deep	main headway 400 feet
No. 2 headway No. 3 south level	north angle deep	back high 380 feet
main south deeps	south side	main 405 feet
main south deeps	south side	north back deep 380 feet
water level north	south deep	high level 80 feeet
water level north	south deep	low level 665 feet
No. 3 north levels	south deep	high level 1160 feet
No. 3 north levels	south deep	low level 1215 feet
No. 1 headway No. 3 north	south deep	main headway 380 feet
No. 1 headway No. 3 north	south deep	back 350 feet
No. 4 levels south	south deep	high level 460 feet
No. 4 levels south	south deep	low level 440 feet
warrier levels north deep	north deep	high level 1445 feet
warrier levels north deep	north deep	low level 1445 feet
No. 6 headway No. 1 level north	north deep	back headway 280 feet
No. 6 headway No. 1 level north	north deep	main high 250 feet

Table of rails in use:—

60 ℔ rails	56 ℔ rails	30 ℔ rails	18 ℔ rails
1300 feet	9200 feet	19300 feet	62700 feet

Table of pipe in use - wrought iron:

8 inch air,	6 inch air,	4 inch air,	3 inch high,	2 inch air,	1½ inch
		air	pressure		
3100 feet	11500 feet	10400 feet	5100 feet	1000 feet	33400 feet

Water-pipe:—

6 inch wood	2 inch wrought iron
4000 feet	6000 feet

Average number of men employed daily during the year.

	skilled workman	unskilled	
Underground:	330	240	=570
On surface	31	26	= 57
		Total	=627

lamps in use	spare lamps	total
585	87	672

Output....................425,700 tons

Powder used during the year:—

bull dog	66251 lb
monobel	1142 lb
excellite	50 lb
total	67443 lb

Tons for each pound of powder used............6.31

The following is surface machinery in addition to that reported for Dominion No. 2.

In use	Kind of Engine	Size of Drum	Size of Cylinder	Rope
Coal hoisting	Jenckes Corliss	8 ft. dia. 2 ft. 7 in. wide	24 by 42 in.	1 3-8 in
Main Shaft	Matheson	8 ft. dia. 2 ft. 7 in. wide	18 by 36 in.	1¼ in.
Fan.	Jenckes		16 by 30 in.	
Fan (spare)			16 by 30 in.	
Ventilating fan	Walker	24 ft. 6 in. dia.		

Underground machinery—engines:—

Main north deep, Flory, 14 by 20 inches; rope 7-8 inch.

North headway, Flory 9 by 10 inches; rope 7-8 inch.

No. 1, north level, Flory, main-and-tail, 9 by 10 inches rope 5-8 inch.

No. 3 north level, 1 Flory, 8 by 10 inches; rope ¾ inches.

Near face, north deep, Jenckes, 8½ by 15 inches; rope 5-8 inch.

Main south level, Jenckes, 14 by 20 inches; rope 7-8 inch.

No. 3 south level, Flory main-and-tail 9 by 10 inches; rope 5-8 inch.

No. 2, south headway Flory, 8 by 10 inches ; rope ¾ inch.

Near face south deep, Jas. Cooper, 6 by 8 inches; rope 5-8 inch.

Air locomotives:—

One Porter, south motor-road, weight 17 tons, 10½ by 14 inches.

One Porter, south motor-road, weight 10 tons 7, by 14 inches.

One Porter, north motor-road, wieght 7 tons, 7 by 12 inches.

Pumps:—

Where located.	Type	Size.
Near pit bottom	Northey duplex	12 by 24 by 8 by 24 compound
" " "	" "	20 by 8 by 24. com.
" " "	Cameron duplex ...	18 by 33 by 9 inches
South Deep	Northey duplex	7¼ by 4½ by 10 inches
" "	Jeansville duplex	14 by 8 by 18 inches
Water level (south)	Northey duplex	7¼ by 4½ by 10 in.
North Deep	Northey duplex	7¼ by 4½ by 10inches
" "	" "	7¼ by 4½ by 10 inches
" "	Cameron	7 by 4½ by 12 inches
" "	Jeansville	14 by 8 by 18 inches
Spare pump	Cameron	12 by 14 by 7 inches

Explosives:—

58,694 ℔ bull dog; 400 ℔ monobel.

Officers.

D. H. McLean, manager

D. J. McCuish, underground manager.

D. W. McDonald, overman.

T. J. Casey, overman

Gilbert Darrow, overman

Neil McDonald, overman

DOMINION NO. 10 COLLIERY.

This mine is on the Emery seam at Reserve in the county of Cape Breton, and is owned and operated by the Dominion Coal Co., Ltd.

The seam is worked on the long-wall system. The long-wall face in under-cut by the disk long-wall machine, and the deeps and levels are under-cut with the puncher-machine.

Advance work:—

Shaft headways	150 feet
Shaft levels	200 feet
No. 2 north levels	200 feet
No. 4 north level	800 feet
No. 5 north level	550 feet

Explosives:—

21088 pounds of bull dog powder.
2268 " " monobel "
9150 " " Samsonite "

Rails in mine:—

7500 feet of 45 lb
11129 " " 13 lb
1020 " " 30 lb

The endless-haulage is on the main deep, and hauls the coal 2500 feet. There have been 800 feet, added to the distance this year. On the main north-level, the haulage is done by main-and-tail rope with branches up two of the main gates. On No. 2 north, the haulage is done by main-and-tail rope, with branches up two of the main gates; on the south headway the haulage is direct.

There are 38,000 cubic feet of air a minute in circulation, produced by a Stine fan 8 feet in diameter, w. g. 4-10 inch. The fan is belt-driven. The air-pipe in the mine can be converted into a water-line when required; as it is connected with main water supply on the surface, and can be used in emergency for fighting fires. There are fire kings on all the landings. The mine is damp, no sprinkling required.

Two hundred and sixty-five Ackroyd and Best safety lamps are in use.

This colliery has the same surface machinery as No. 5 colliery.

Underground machinery.

Two Flory main-and-tail rope engines 14 by 20 inches. One Cameron pump (pit bottom) 12 by 7 by 34 inches.

One Lawrence contrifugal pump, capacity 1000 gallons a minute. One small sinking pump.

Main deep haulage was extended 500 feet during the year. also the main-and-tail rope haulage on the main north level, and No. 2 north off the north deep.

A centrifugal pump capable of handling 1000 gallons a minute, has been placed in the new lodgement, A new pump-house 30 by 20 by 10 feet, with concrete walls, and stable beams supporting the roof has been built.

Officers.

Joseph Bosh, manager
Harry Bert, underground manager
Walter Johnstone, overman

DOMINION NO. 21, COLLIERY.

The slopes are sunk in the southern outcrop of the Gowrie seam and extend through the northern outcrop on a bearing of N. 29 degrees, 11 minutes E. The dip varies from 10% northeasterly on the south side of the trough to 60% south westerly on the northern side. The distance from cover on south side of slope to cover at north side is 1800 ft. The seam is five feet four inches thick. The pavement is fireclay; the roof is shale 17 inches overlaid by thin seam of coal of varying thickness. The output during the year was 31147 tons from rooms and from narrow work.

The method of work is bord and pillar; the rooms being driven 30 feet wide and pillars 30 feet. Rooms are parallel to levels. There are 112 men employed in the mine and 40 on the surface.

Narrow Work Driven

Deeps	275 feet
Upper West level	250 feet
Lower " "	450 feet
Upper east level	250 feet
Lower " "	475 feet

The main slope is laid with 60 ℔ rail; endless haulage is used. The capacity of the box is 1 ton; tare 890 ℔; size of haulage rope 7-8 inches.

Surface machinery:—

A stine fan 12 feet in diameter is being installed on the air shaft. It will be electrically driven and will produce approximately 100,000 cubic feet of air with 1 inch w. g.

The depth of the shaft is 31 feet, size of airway 12 by 5½ feet. At present natural ventilation is resorted too.

Acroyd Best lamps are used. One electrically driven cross—compound air compressor, 20 by 18, compressing 1200 cubic feet of air per minute, operated by a 200 h. p. Westinghouse variable speed induction mortor 550 volt, 200 amp. Running at 228 r. p. m. at full load.

The only boiler on the plant is one Matheson vertical, 54 inches diameter by 10 feet high with a working pressure of 100 lb, used in connection with the Webster vacuum heating system. At the north outcrop, a Robb portable 165 h. p. boiler is in use temporarily. The water service and fire protection consists of one Mather and Plat 500 gallon Turbine pump at McDonald's Lake, one mile west of the Colliery. This is run by a 35 h. p. Canadian General Electric motor; water is pumped through an 8 inch main into a 43000 gallon tank, the bottom of which is 20 feet higher than the top of the bankhead. A fire protection and general supply system of pipes are laid all around the colliery. There are six 6 inch hydrants located at convenient points . The bankhead is 225 feet long from the knuckle to the end, and is built of wood with corrugated iron sides and concrete floor. The machinery is electrically operated: one 20 h. p. C. G. E. motor driving the screens and belts; and a 10. h. p. C. G. E. motor driving the car haul and rotary tipple. The haulage engine house is of wood 20 by 27 feet. The endless rope haulage is operated by a Siemens 50 h. p. motor. The transformer house is of brick and contains 3-75 K. V. A. Can. Gen. Electric transformers 6600-550 volts and 1-10 K. W. 6600-220-110V: with this exception and the fan house which is of concrete, the surface buildings are all of wood.

The wash house is 30 by 54 with 100 lockers; lamp house 30 by 24 fitted for 248 lamps. Stable 74 by 32 with accommodations for 14 ponies and six horses, beside box stall, etc.

Carpenter shop	30 by 20
Forge, (with two fires)	30 by 20
Warehouse	30 by 20
Oil house	12 by 15

Dominion No. 22, Colliery.

The work of sinking the slopes of this Colliery was commenced Jan. 15, 1912. The slopes are now down 1200 feet: the west levels are in 200 feet, and the east levels 250 feet. The bearing in slope is N. 34 deg. 18 min. East. which is nearly full dip at this point. The location of the Colliery is at west end of Morrison's lake, and on the south outcrop of Gowrie seam. The coal is 5 feet 3 inches high and roof is dark shale with coal streaks; pavement fireclay and shale, over lying sandstone. Coal is shipped from the back slope over a temporary bank head. The coal is hauled up in trips. The boiler house with two Matheson portable boilers of 65 h. p. each, and the hoisting engine house are also temporary; a permanent transformer house of brick and corrugated iron is nearing completion; and a power line is in to the colliery.

The following permanent buildings are erected:—

Office	14 by 24
Wash house	30 by 54
Lamp house	30 by 24
Forge	30 by 20
Carpenter shop	30 by 20
Warehouse	30 by 20

The water system when completed will consist of a pump at Morrison's Lake 1500 feet away: a main leading direct to a 43000 gallon cypress tank which will give a gravity head on the surface plant. A fire protection system is being installed with hydrants set at convenient points. The output last year was 12706 tons, all of which have been shipped away from the mine. Quantity of powder used 2603 ℔. Work of installing a Webster vacuum heating system is under way. The box is one ton capacity, tare 890 ℔. This mine is ventilated by natural ventilation. Work of installing permanent plant is well under way. Endless rope haulage will be used. There are at present 54 men employed in pit and 13 men on surface.

John J. McNeil,
Deputy Inspector of Mines.
Glace Bay,NS.

DOMINION COAL COMPANY, LIMITED.

Statement Showing the Quantity of Air in Circulation and Water Gauge at each Colliery as existing September 30th, 1912.

COLLIERY	Cubic ft. of air a minute		
Dominion No. 1...	166,860	2.2	
“ “ 2	228,000	4.5	
“ “ 3	80,000	2.4	
“ “ 4...	100,000	3	
“ “ 5...	140,000	1.5	French Slope
	60,000	1.5	East Slope
“ “ 6...	56,760	1.8	
“ “ 7...	60,000	1.4	
“ “ 8...	58,000	.2	
“ “ 9...	208,000	2.7	
“ “ 10...	38,000	4	
“ “ 12...	100,250	.7	
“ “ 14...	111,000	1.7	
“ “ 15...	40,000	1.5	
“ “ 16...	45,000	.6	

The fan at No. 16 being temporary no water guage was put in.

No. 21 and 22 collieries being ventilated by natural ventilation it is impossible to give the quantity of air and water guage.

DOMINION COAL COMPANY, LIMITED.

Employment Statistics for Year ended September 30th, 1912.

COLLIERY	Avg. Days worked each month	Average weekly force				
		Surface	Under-ground	Mining coal.		Total.
				Hand	Machine	
Dominion No. 1	24.4	93	415	47	51	606
“ 2	23.5	93	512	249	43	897
“ 3	23	48	101	48	5	202
“ 4	23.7	79	309	115	33	536
“ 5	23.9	57	145	107	9	318
“ 6	22	62	245		32	339
“ 7	23.6	52	244	16	23	335
“ 8	22.7	58	101	121		280
“ 9	23.4	59	454	49	42	604
“ 10	24.1	59	254	2	27	342
“ 12	24.4	59	268	55	28	410
“ 14	23.5	60	271	6	39	376
“ 15	25.	58	163	84	5	310
“ 16	25.	48	139	60	7	254
“ 21	24.7	24	26	24		74
“ 22	24.3	12	12	22		46
Totals		921	3659	1005	344	5929

Transportation	1996
Commercial	435
Construction, repairs, etc	700
Discharging plants	750
grand total	9810
Total number of horses in use	727

DOMINION COAL COMPANY, LIMITED.

Statement showing Production from Narrow Work, Rooms, etc., for Year Ended September 30th, 1912.

COLLIERY.	Narrow work		Machine rooms		Hand rooms		Pillars		Longwall		Total
	Tons.	%	Tons.	%	Tons.	%	Tons.	%	Tons.	%	Output.
Dominion No. 1	86,195	14.8	378,924	65.2	5,488	.9	105,894	18.2	....	....	581,650
“ 2	161,194	20.2	175,713	22.0	26,836	3.3	425,766	53.4	....	....	797,922
“ 3	9,623	7.3	33,476	25.5	7,189	5.5	79,965	60.8	....	....	131,340
“ 4	80,593	19.3	145,582	34.8	28,937	6.9	158,630	37.9	....	....	418,784
“ 5	....	....	60,197	21.6	14,785	5.3	201,883	72.5	....	....	278,602
“ 6	44,595	16.5	225,256	83.2	....	....	....	....	....	....	270,658
“ 7	60,508	30.3	110,699	55.5	16,614	8.3	8,342	4.2	....	....	199,405
“ 8	11,535	7.0	....	....	152,983	92.9	160	.1	....	....	164,678
“ 9	111,657	26.2	234,767	55.1	5,947	1.4	72,002	16.9	....	....	425,270
“ 10	68,306	32.8	12,394	.6	273	....	....	....	126,390	60.7	208,143
“ 12	65,335	20.7	197,404	61.3	59,338	18.4	....	....	....	....	322,077
“ 14	104,358	36.2	183,084	63.6	489	.2	....	....	....	....	288,191
“ 15	65,825	57.3	41,491	36.2	7,516	6.5	....	....	....	....	114,832
“ 16	64,172	74.0	12,455	14.6	10,098	11.4	....	....	....	....	86,725
“ 21	14,983	48.1	1,511	4.8	14,636	47.1	....	....	....	....	31,130
“ 22	11,031	85.5	....	....	1,882	14.5	....	....	....	....	12,913
Total	959,910	22.2	1,812,953	41.8	353,011	8.1	1,052,646	24.3	126,390	2.9	4,332,320

DOMINION COAL COMPANY, LTD.

Timber Used at Collieries for Year Ended September 30th, 1912.

COLLIERY.		Props.		Booms.		Sleepers.		Total Lineal Feet.
		Number used.	Lineal feet.	Number used.	Lineal feet.	Number used.	Lineal feet.	
Dominion No.	1	77,532	697,788	2,058	33,365	31,732	127,056	
"	2	205,524	1,746,627	1,119	17,156	38,383	144,815	
"	3	57,736	514,580	462	7,104	4,959	24,855	
"	4	110,711	902,525	2,556	35,941	20,263	82,528	
"	5	59,983	539,687	255	3,880	13,219	55,972	
"	6	24,867	182,405	288	4,336	17,200	87,345	
"	7	48,335	425,507	7,475	109,004	15,916	68,608	
"	8	44,152	309,635	131	1,784	7,863	31,852	
"	9	97,824	715,862	969	14,458	13,588	73,020	
"	10	106,719	590,083	670	8,282	14,687	60,788	
"	12	41,696	295,938	4,946	64,974	28,816	117,082	
"	14	58,402	467,216	8,961	115,507	40,367	170,173	
"	15	18,517	125,878	12,218	162,778	20,402	87,993	
"	16	15,317	107,196	8,973	110,525	16,570	66,448	
"	21	4,370	30,590	520	7,280	3,025	12,100	
"	22	1,991	13,457	149	2,086	834	3,336	
Totals		973,676	7,664,974	51,750	698,460	287,824	1,213,971	9,577,405

DOMINION COAL COMPANY, LIMITED.

Statement Showing Average Number of Gallons of Water Pumped each Month by each Colliery for Year ended September 30th, 1912.

COLLIERY.	Gallons each Month
Dominion No. 1	15,500,000
" 2	3,000,000
" 3	7,500,000
" 4	36,000,000
" 5	20,500,000
" 6	6,500,000
" 7	10,500,000
" 8	44,000,000
" 9	15,000,000
" 10	14,000,000
" 12	3,000,000
" 14	4,000,000
" 15	2,000,000
" 16	3,500,000
" 21	6,000,000
" 22	3,000,000
Total	194,000,000

Report of accidents in coal mines of Nova Scotia, South Cape Breton District, Year ended September 30, 1912.

No.	Date of Accident.	Name of Mine	Name of Company.	Name of Person Injured	Age	Occupation of Person Injured.	Cause of Accident.	Nature of Injury.	Verdict of Coroner's Jury.
1	Oct. 7, 1911	Dominion No. 5	Dominion Coal Company	Thos. Andrews	45	Miner	Fall of Stone in pillar	Leg Fractured	
2	“ 7 “	“ 5	“ “ “	Joseph Gardiner	40	Miner	Fall of coal in pillar	Bruised about hips	
3	“ 13 “	“ 4	“ “ “	Sam Crocker	33	Miner	Fall of Stone	Leg and hip hurt	
4	“ 16 “	“ 2	“ “ “	George Shearer	23	Miner	Fall of Coal	Leg broken	
5	“ 18 “	“ 9	“ “ “	Alex. Labell	20	Driver	Fell under Air Locomotive	Brused leg	
6	“ 19 “	“ 2	“ “ “	Dan. McLean	20	Motor driver	Fell under Engine	Killed	Accidental
7	“ 24 “	“ 2	“ “ “	Hector J. McNeil	34	Miner	Fall of Coal at working face	Leg broken	
8	“ 24 “	“ 2	“ “ “	A. F. O'Riley	28	Helper	Fall of coal at working face.	Back injured	
9	“ 24 “	“ 2	“ “ “	Harry McAdam	16	Machinist Helper	Caught between piston rod nut, and socket	Finger crushed	
10	“ 26 “	“ 9	“ “ “	Henry Tait	30	Deputy Overman	Fall of stone	Dislocation of hip	
11	Nov. 3, 1911	“ 2	“ “ “	John Kennedy	25	Brakeman	Charging Station burst	Fracture of the muscles of the left leg	
12	“ 11 “	“ 2	“ “	Joseph Arsnault	26	Miner	Fall of stone & coal in pillar.	Jaw Fractured	
13	Dec. 22 “	“ 2	“ “ “	John Smart	20	Brakeman	Fell under trip of coal	Killed	Accidental
14	“ 28 “	“ 10	“ “ “	Neil McPhee	....	S. & Loader	Fall of stone	Skull fractured	
15	Feb. 3, 1912	“ 3	“ “ “	Jonathan Wyld	18	Driver	Jammed between box & prop	Leg broken	
16	“ 9 “	“ 10	“ “ “	Rory McNevin	18	Chain run.	Run over by trip	Leg broken and shoulder hurt	
17	“ 29 “	“ 4	“ “	Wm. McLeod	45	Miner	Fall of coal off pillar	Hip bruised	
18	March 1 “	“ 2	“ “ “	James McInnis	27	Road Boss	Hand caught in haulage engine while oiling	Arm broken	
19	“ 4 “	“ 9	“ “ “	John McNeil	17	Driver	Caught between box & timber	Back and hand hurt	
20	“ 6 “	“ 7	“ “ “	John Carrington	26	Miner	Fall of stone	Back broken	
21	“ 13 “	“ 10	“ “ “	John Rozennork	39	S. & Loader	Fall of stone	Leg broken	
22	“ 23 “	“ 5	“ “ “	Martin Hines	49	Miner	Fall of stone & coal	Leg broken	
23	April 13 “	“ 2	“ “ “	Rod McPhee	16	Driver	Caught between box & timber	Leg fractured	
24	“ 16 “	“ 9	“ “ “	Phillip O'Donnell	20	S. & Loader.	Fall of stone	Leg fractured	
25	“ 17 “	“ 10	“ “ “	Armond Vitus	24	S. & Loader.	Fall of stone	Killed	Accidental
26	“ 17 “	“ 5	“ “ “	Dan. D. McKenzie	46	Miner	Fall of coal	Arm broken	
27	“ 23 “	“ 2	“ “ “	Angus McDonald	30	Miner	Fall of coal	Scalp wound, Ribs broken	
28	“ 28 “	“ 4	“ “ “	Pat. Gilday	67	Shiftman	Fall of stone	Temple cut	
29	“ 29 “	“ 4	“ “ “	Rory McAulay	27	Miner	Lifting on full box it came down and	Bruised his ankle	
30	“ 29 “	“ 4	“ “ “	Peter McAulay	29	Dirver	Caught between box and shafts	Bruised hip	
31	“ 30 “	“ 9	“ “ “	Wm. Boutilier	24	Landing tender	Caught between boxes	Leg broken	
32	“ 30 “	“ 9	“ “ “	Herbert McDonald	18	“ “	Caught between boxes	Foot bruised	
33	“ 30 “	“ 4	“ “ “	Archy Pilley	25	Driver	Struck by bow of shafts	Breast injured	
34	May 2 “	“ 7	“ “ “	James Cunliff	26	Miner	Fall of coal	Leg fractured	

35	"	3	"	"	2	"	"	"	Andrew Kowncroat	24	Loader	Fall of coal	Leg fractured	
36	"	22	"	"	4	"	"	"	Leslie J. King	31	Laborer	Caught between cars	Finger crushed	
37	June	29	"	"	10	"	"	"	Gerare Boussie	38	S. & Loader	Fall of stone	Leg fractured	
38	July	11	1912	"	"	"	"	"	Anthony McSorley	16	Rope guider.	Caught by rope and drawn behind drum	Killed	Accidental
39	"	22	"	"	2	"	"	"	Wm. Gumatto	22	Car Trim	Caught between bunters	Finger crushed	
40	"	29	"	"	4	"	"	"	Rod McLeod	28	Helper	Fall of stone	Face cut	
41	"	31	"	"	2	"	"	"	Edw. Fury	45	Repair man.	Chain fell on him	Small bone broke in leg	
42	Aug.	5	"	"	2	"	"	"	Joseph Bellan	32	Miner	Fall of stone in pillar	Killed	Accidental
43	"	16	"	"	9	"	"	"	Patrick Crawford	16	Driver	Fell under fuel box	Killed	Accidental
44	"	24	"	"	5	"	"	"	Wm. Hall	19	Driver	Jammed between box, roof.	Back injured	
45	"	27	"	"	5	"	"	"	Richard Day	53	Miner	Fall of coal in pillar	Leg broken	
46	Sept.	16	"	"	6	"	"	"	Patrick McLaughlin	25	Helper	Fall of coal at face	Leg broken	
47	"	17	"	"	2	"	"	"	Mick Kavanagh	48	Miner	Fall of coal at face	Foot crushed	
48	"	24	"	"	2	"	"	"	Lenord Volskey	30	Miner	Fall of stone	Back injured	
49	"	30	"	"	5	"	"	"	Jno. D. McDonald	26	Sur. Lab.	Caught between boxes	Arm broken	

Sydney Mines, N. S.
October 21, 1912.

HIRAM DONKIN, ESQ.,
Inspector Mines, Halifax, N.S.

DEAR SIR:—I beg leave to submit the annual report on the coal mines in the northern division of Cape Breton County for the year ended September 30th, 1912; also report of Dominion No. 1, No. 12, No. 14, No. 15 and No. 16 collieries in the southern district of Cape Breton County. I am pleased to be able to report that the year 1912 has been a very successful and indeed a remarkable one, the output of the collieries is in excess of any year in the history of Cape Breton coal mining. There has been an increase of 452,593 tons in this district. The output of the Dominion Coal Company in this inspectoral district was 1,400,320 tons, an increase over the previous year of 385,835 tons. The output of the Nova Scotia Steel and Coal Company was 821,165 tons, an increase over the previous year of 62,237 tons. The McKay Mine shows an increase of 2,291 tons, and the Sydney Coal Company an increase of 800 tons.

I regret to have to report thirtyone accidents, fifteen of which were fatal.

On October 12th, 1911, at Dominion No. 1, Colliery, Robert Brown, trip rider, while riding in the level, in some unaccountable manner fell off the trip, and was run over by several boxes and instantly killed. On October 26th, 1911, Stefano Cibarro was killed at the working face in Dominion No. 12 colliery, by a fall of stone. On November 10th, 1911, at Dominion No. 1, colliery, Mario Trevison was killed at the working face, by a fall of stone. On December 22nd, 1911, at Dominion No. 1 colliery, Barnardo Zaniol was killed at the working face, by a fall of coal. On February 9th, 1912, at Dominion No. 12 colliery, Amorosi Candido was killed while driving out the level. The horse became detached from the box. The deceased falling off, was run over. On March 26th, 1912, at the Scotia Colliery, Sebastian Farrell was instantly killed, and his brother William Farrell fatally injured, died in the hospital, seventeen hours later. The accident was caused by a fall of stone at the working face. On April 22nd, 1912, at Dominion No. 12 colliery, Freeman Clements was killed by a fall of coal at the working face. On May 28th, 1912, Albert Wilkowski, while taking a box off the cage, failed to get it clear of the cuddy road; the cuddy coming up the balance struck the box and caught deceased between the box and the rib; leg broken and badly cut above the knee. Died from shock and loss of blood.On June 21st, 1912, at Princess Colliery, Roderick McKinnon, was killed by a fall of stone at the working face. On June 29th, at Dominion No. 15 Colliery, Albert Cauffrey, was killed by a premature explosion. On August 1st, 1912, at Scotia Colliery, Dan H. McNeil was fatally injured by a fall of stone at the face of deeps, dying in the hospital 8 hours after the accident.

On September 10th, 1912, at Queen Colliery, David Robertson while in the act of taking down a hung shot, was instantly killed by a fall of stone and coal. On September 26th, 1912, at Scotia Colliery, John E. Stephenson, while in the act of securing a boom, a fall of stone took place, killing him instantly.

The Nova Scotia Steel Coal Company, have put down a bore-hole 20 feet from the Queen Pit pumping-shaft, to a depth of 1117 feet. At 774 feet they struck the No. 3 seam. The thickness of this seam is 4 feet 3 inches. At 962 feet they went through a seam 5 feet 3 inches. At old No. 3, Colliery along side the Tobin road, a bore-hole was put down 1034 feet 6 inches. At 83 feet they went through a seam 4 feet thick. At 173 feet, 2 feet 4 inches of coal, and at 307 feet, 2 feet 9 inches of coal. The company is going to put down two slopes on the main seam. These slopes will be sunk half a mile to the north-west of the Scotia Colliery. The new bankhead that will be erected, will handle the coal from both collieries. The coal from the Scotia Colliery will be conveyed by endless haulage to the new colliery, where it will be screened and prepared for the market.

During the year the, company built three officials houses, and thirty three employes' houses; those built for the workmen are paid for on the installment plan; they are eight-room houses, and cost from $1,600 to $2,000. The workmen of Sydney Mines are to be congratulated in this respect.

Princess Colliery.

There are 755 men employed at this colliery, 624 in the mine and 131 on the surface. The output was 208,279 tons. Of this quantity 74,872 tons were mined in pillars, 66,859¾ in narrow places, 66,547¾ rooms. There were 18,827 ℔ of compressed powder used during the year. The Marsuat safety lamps are in use of which number there are 763. The system of work is bord-and-pillar, bords 17 feet wide, pillars 60 feet thick. The coal is all mined by hand picks. The seam is from 5 to 6 feet thick. The coal is soft and gaseous. The roof and floor are shale. Some of the districts are dry; water-tubs are used for spraying. Direction of true dip-south 80 degrees east.

Rails in Mine.

47,476 feet of 12 ℔: 62,493 feet of 18 ℔: 86,644 feet of 28 pound.

I visited this colliery 18 times during the year.

Development Work.

North Side—south east	396	feet
South side No. 1 south deeps	528	“
“ “ south level	528	“
“ “ north level	726	“
Barrier level, south side	462	“
Deepth off No. 6 level south	198	“
Level below Shinners	400	“
Deep off level	264	“

Machinery on surface.

Bankhead frame is of wood. Pit head-frame is of steel.

Detaching hooks on shaft ropes, also safety catches in pulley frames.

The coal is hoisted with a direct-connected engine, having a pair of 36 by 60 inch cylinders and a drum 18 feet in diameter, 7 feet wide. Steam is used at 60 ℔ pressure on this engine, being supplied by means of a Boston reducing valve from the main steam-range.

The man-hoisting engine has a pair of 16 by 30 inch cylinders directly connected to a pair of conical drums, equipped with both regular and safety brakes.

One plane rope haulage-engine located on the surface with a haulage rope going down the shaft into the north side of the pit. This engine consists of a pair of 16 by 30 inch cylinders geared 3-5 to 1, to a pair of friction drums, 6 feet in diameter by 26 inches wide. A tandem compound-engine 14 by 24 by 42 inches is used for driving an endless-haulage-rope system, taking coal from south side of pit. This engine runs 42 revolutions a minute and is geared 6 to 1 to bull-wheel shaft, the pinion being driven by a friction clutch.

Compressed air is furnished at 80℔ pressure, by a Walker compressor; steam cylinders 24 and 46 inches diameter, air cylinders 26 and 42 inches diameter, stroke 54 inches, capable of furnishing 4000 cubic feet of air a minute at 55 revoutions. The haulage engine and compressor are running condensing, and connected to a 12 by 17 and 19 by 15 duplex Worthington jet condenser.

Tipples and Screens.

Two tubs of coal are hoisted at one time. They are taken out by hand and weighed on a quick-reading platform scale, and dumped by means of a hand operated revolving tipple, on a bar screen having an opening of ¾ of an inch, the coal being separated into two sizes. The screens deliver the coal to a combined picking-belt and elevator on which it is picked and elevated to sufficient height to load into fifteen-ton hoppers.

The ventilating fans are located at No. 5. colliery on the same seam, about 3000 feet from No. 1 Colliery, and are used for ventilating both collieries.

The ventilating equipment consists of one motor-driven engine. One 20 feet by 5½ feet, Capell steel-plate fan driven by a 120 h. p. direct current 220 volt motor, geared with a 4.2 to 1 reduction to fan. Usual speed of fan about 100 revolutions a minute, capacity, 120,000 cubic feet of air a minute, under 3 inch water gauge.

Spare equipment consists of a 30 by 10 feet Walker-Guibal fan directly connected to a 22 by 24 inch engine, running 60 revolutions a minute, capacity 120,000 cubic feet of air a minute under three inch water gauge.

Guibal Fan—steam driven—connected direct. Capell Fan electrically driven—connected by gearing.

Average water gauge, three inches.

Average thermometer, fifty five degrees.

Average barometer, thirty inches.

Length of fan drift 34 feet, area 80 feet, fan shaft 10 feet in diameter.

Guibal fan house 30 by 16 feet, wood covered with metal shingles. Capell fan house 24 by 12 feet, brick. Actual distance of Guibal fan house from shaft 20 feet; Capell fan house 40 feet.

The air is divided once at the pit bottom. The split going south is one continuous current around the working faces, it returns through the old workings to the fan shaft stationed at No. 5 Colliery. The air going north is divided into three splits and is conducted around the working faces to main return, thence to No. 5 Colliery. Size of airway is 5 feet 6 inches by 9 feet. Wood and stone stoppings, and the ordinary tarred brattice cloth are used at this colliery.

The boiler plant consists of six 272 h. p. B. & W. boilers, operating at 120 ℔ pressure to the square inch. Three of these boilers use the waste gas from thirty Bauer coke ovens as fuel. A 108 by 54 inch Sturtevant induced-draft fan, directly connected to an eight by 10 S. C. engine, being used to draw the gases from the coke ovens through these boilers, and deliver them to a round brick stack 125 feet high, 8 feet in diameter; the stack also being used to supply draft for the other three boilers which are fired with a mixture of slack coal and coke-breeze. An induced draft fan built by Sheldons Limited, Galt., Ont., in connection with five 272 h. p. B. & W. boilers. An ash crusher and elevator installed for handling ashes and delivering them to slate pile.

Underground Machinery.

There are nine pumps in the mine. No. 6 Cameron 8 by 12 by 5 located at No. 3, and seven Northey duplex, 5½ by 6 by 3½ stationed at intervals between bottom and face of deeps, pumping water to the lodgement at pit bottom. The water from the pit bottom to the surface is pumped with a 15 by 28 by 8½ by 24 outside packed direct connected Jeansville pump, connected to an 8 by 12 by 12 Cameron jet condenser. This pump has a capacity of 600 imperial gallons a minute, under 640 feet head. Pumps are operated by steam and compressed air. Maximum quantity of water that can be discharged in an hour is 36,000 gallons. Capacity of reservoirs on surface—217,301 gallons. Water supply is from Pottle's Lake, North Sydney.

Haulage System.

The south side is operated by endless haulage 9,240 feet in length. The haulage is in the form of a loop and has a little more than 25,000 feet of rope in service. Size of rope 1⅛ inch.

The north side is operated by a plane haulage system, two ropes 7,200 feet long, 30 cars on each rake, weight of empty car 850 ℔, capacity 1500 ℔: the coal is hauled to these ropes by horses and small haulage engines.

Pitch of slope, one in eleven: length of slope 9,200 feet: width 9 feet.

Depth of coal shaft—680 feet, 13 feet in diameter. Depth of man shaft—680 feet, 11 feet diameter.

Timber used underground Princess Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	6	4	123655	741930
Booms	6′–8″	4	50412	336080
	8′–0″	5	80	640
	10′–0″	5	2823	28230
	12′–0″	6	323	3876
	16′–0″	6	352	5632
Sleepers		Width of face and thickness		
	4′–0″	3½″ x 3½″	23121	82484
	5′–0″	3½″ x 4″	1083	5415

QUEEN PIT.

There are 334 men employed at this colliery of which number 166 skilled and 125 unskilled are employed in the mine, and 16 skilled and 27 unskilled are employed on the surface. There are also 25 boys employed, 21 of whom are in the mine and 4 on the surface.

The output during the year was 116,929 tons, made up as follows: rooms, 47,630; narrow places, 25,131; pillars, 44,268 tons.

There were 21,966 ℔ of compressed powder used during the year.

Thickness of seam is 5½ feet, soft coal, gaseous. The roof and floor are shale: the mine is damp: pitch one in eleven: direction of true dip, east.

Method of working, bord-and-pillar: width of rooms 18 feet, pillars 24 feet thick.

Size of timber used is 4½ inches, small end. System of timbering is props-and-caps, sometimes props-and-booms, according to condition of roof.

There are two sections in the mine: the north side is ventilated by the return from No. 1 colliery, one continuous current passing around the working faces, thence to fan-shaft. The south side is ventilated by a separate split from the main shaft. quantity of air in circulation 100,000 cubic feet a minute. Board stoppings, stone stoppings, and asbestos brattice cloth, are used.

Development work.

Main level south	432	feet
Sullivan's level north	264	“
No 4 level north	396	“
Deeps off Sullivan's level	264	“
Deeps off No 4 level north	330	“
Total length	1950	“

Equipment and surface Machinery.

This mine is entered by a shaft 360 feet deep, 10 feet diameter. Both coal and men are hoisted in this shaft by a directly connected engine having a pair of 14 by 36 inch cylinders. The pumping shaft is 10 feet in diameter, equipped with a separate hoisting engine and a man-cage for the men to descend and ascend in case of an accident to the main shaft. There is a connection between this mine and No 1 Colliery.

The coal is all hauled from No 1 main north level and main south level by an endless rope, driven by a 75 h. p., 240 volt direct-current Canadian Westinghouse & Jenckes Machine Company haulage-gear. Rope is ⅞ of an inch in diameter. Weight of empty car 850 ℔, capacity 1500 ℔, 30 cars attached to rope by grabs: the road is level. The load in the shaft is 3,734 pounds

Walker detaching hooks, and safety catches in pulley frame.

Pit-head and bank-head are of wood.

The loaded mine-cars are pushed by hand from the cage over a platform scale and onto a hand-operated dump-tipple which delivers the coal to a pair of shaking screens 21 feet long by 5½ feet wide, the cam shaft operating the screens runs at 88 revolutions a minute. The upper screen is furnished with a set of blank plates for making run-of-mine, and perforated plates with 2½ inch holes for making screen coal, and a similar screen underneath this, furnished with ¾ inch holes, divides the coal into slack and nut.

At right angles to the screens are two picking belts each 47 feet long with a 20 feet adjustable jib arranged to lower into the bottom of a 15 ton coal-hopper. One of the picking belts, 5 feet wide receives the screened coal, the second belt which is 4 feet wide receives the nut coal; this allows these two classes of coal to be picked. These belts run forty feet a minute, and the driving sprockets are operated by a worm-and-worm gear. At the end of these belts there is a hinged, adjustable chute, which receives the coal from the picking belts and delivers it into box cars. All the machinery in the screen house is driven by a 35 h. p. 240 volt, type S. Westinghouse, direct current motor.

Underground machinery.

One Elliot pump 30 by 48 inches, at shaft bottom, operated by steam. Maximum quantity of water that can be discharged in an hour, 18,000 gallons.

There are 1,100 feet of 12 lb rails, 64,458 feet of 18 lb rails and 12,160 feet of 28 lb rails in the mine.

For fire protection connection is made with hydrant on water main.

The water supply is obtained from Pottle's Lake, North Sydney.

The Nova Scotia Steel & Coal Company's mine officials and workmen go through a course of training (two officials and two men at a time) in their turn, in the smoke house, with the Draegar-breathing-apparatus, once a week for half an hour. The smoke-house is 24 by 14 feet, with 8–feet post.

Officers.

Robert Robertson, manager.

Alex McDonald, underground manager.

George Slavin, overman.

Andrew Baillie, overman.

David A. Robertson, overman.

Timber used underground Queen Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	6	4	44840	269040
Booms	6′–8″	4	33795	225300
	8′–0″	5	2421	19368
	10′–0″	5	3568	35680
	12′–0″	6	208	2496
	16′–0″	6	69	1104
Sleepers		Width of face and thickness		
	4′–0″	3½″ x 3½″	6706	26824

Scotia Colliery.

This colliery is about two miles to the north-west of No 3 colliery. There are two miles of railroad from the main line to the colliery.

The bankhead and trestle approach are about 800 feet long, reaching from the slope to the tracks. The mine cars are hauled out of the slope and backed down this incline by gravity to a hand-operated tipple. The coal passes over one bar-screen, the large coal being delivered to a picking belt 5 feet wide, 43 feet long, and having an adjustable jib. The smaller coal passing through the bar-screen, is conveyed by a Robbin's endless rubber-belt conveyor to slack-hopper.

The coal is mined by electric, class E6, Sullivan machines. There is also a number of hand-pick miners employed in the mine.

Plane haulage is used: diameter of haulage rope is ⅞ inch. Pitch of slope one in eleven. Weight of empty car 1080 ℔, capacity one ton: number of cars on rake, 20. Total lenght of slope 3,750 feet, width 10 feet. Thickness of seam three to five feet: coal is soft. The mine is free from gas and is damp: roof and floor are shale, direction of ture dip, east. Method of working is bord-and-pillar: width of rooms 20 feet, width of pillar 20 feet. The pillars are increased according to cover. Size of timber is 4½ inches at the small end. System of timbering is props-and-caps, sometimes props-and-booms, according to the condition of the roof.

There are two sections in the mine, north, and south side. The main slope is the intake, and the air is split at the bottom of the slope and returns north and south to the fan-shaft. Board stoppings and stone stoppings are used, and the ordinary tarred brattice cloth. The output during the year was 143,473 tons—an increase over the previous year of 29,566 tons. Of this amount 114,325 tons was from the rooms, 23,835 tons from narrow work, 5,313 tons from pillars. There were 30,347 ℔ of bull-dog compressed powder used during the year.

There are 413 men employed at the colliery, of which number there are 214 unskilled and 130 skilled in the mine, and 25 skilled and 44 unskilled on the surface. There are also 36 boys employed, 33 of whom are in the mine, and 3 on the surface.

Development work.

No 2 level south	380 feet	1570 feet
No 3 “	330 “	1470 “
No 4 “	440 “	1560 “
No 5 “	320 “	1050 “
No 6 “	360 “	660 “
No 7 “	100 “	100 “
No 4 level north	—	—
No 5 “	110 “	580 “
No 6 “	170 “	380 “
No 7 “	100 “	100 “
Main deeps	420 “	3750 “
Deeps off No 5 south	460 “	460 “
Deeps off No 6 south	430 “	430 “
Deeps off No 6 north	240 “	240 “

Surface machinery.

One haulage engine 16 by 24 inches, drums 6 feet diameter, two and one half feet wide. One 100 h. p. Lancashire boiler. Two 5 by 20 inches Matheson return-tubular boilers with steel smoke stack.

One artesian well for boiler feed-pump, 4 inches diameter, 127 feet deep, lined with 3½ inch pipe. One 14 inch bore-hole 251 feet deep, lined with 8 inch wrought iron pipe cemented in hole, to be used as a pump-discharge below No 6 lodgement, 3,200 feet from face of slope. One 4 inch bore-hole lined with 3½ inch wrought iron-pipe, 2,850 feet from slope mouth on No 6 level south, 85 feet from back slope, to convey a 500,000 C. M. armoured cable to pumps, haulage engine, and cutting machines. One overhead transmission line from power house to 4 inch bore-hole on surface. This 4 inch bore-hole is 217 feet deep. One Sturtevant fan, 6 feet diameter, width of blade 3 feet. One Sirocco fan 4½ feet diameter, 5 feet wide, with Robb automatic-engine 14 by 12 inches. This fan will produce 150,000 cubic feet of air a minute, water gauge 5 inches, present quantity of air in circulation, 54,680 cubic feet a minute, water gauge 1 6/10 inch. The airway is 4½ by 10 feet: length of fan drift 130 feet, area 48 feet. Fan-shaft is 8 feet diameter.

Average thermometer reading—50 degrees.

Average barometer reading—30 inches.

Sirocco fan-house is of concrete, 27¾ by 9½ feet. Sturtevant fan-house is of wood. The distance of fan-house from air shaft on the south side of the slope 77 feet, and on the north side 53 feet.

There are two 100 kw 250 volt Crocker-Wheeler direct-current generators, directly connected to a 16 by 16 inch Robb engine.

Lamp house 30 by 16 by 8 feet, of brick with concrete floor. Blacksmith and machine repair shop 60 by 32 by 12 feet.

Underground machinery.

One 7-stage turbine pump, capacity 250 gallons a minute, against a pressure of 125 ℔ to the square inch, directly connected to a 55 h. p. motor, located at lodgement 1,700 feet from mouth of slope. Two Dean sinking pumps, (triplex) motor driven, capacity 43 gallons a minute, geared to 5 h. p. motors. One 20 h.p pump, (turbine), located 3000 feet from mouth of slope. Two 5 h. p. worm pumps, discharge 15,000 gallons an hour.

Thirteen double-friction drum motor-driven hoists, equipped with 11 h. p. motor. Seventeen electric coal-cutting, class E6, Sullivan machines.

Switches operated by balance weight at mouth of slope. Swinging Samson-posts are placed at intervals in the slopes to protect the sinkers. In case of fire, water is supplied from a temporary reservoir on the surface. The water supply is obtained from an artesian well. The timber supply is obtained in Cape Breton.

Rails in mine.

There are 5,190 feet of 12 ℔, 75,268 of 18 ℔, 21,713 of 28 ℔ rails.

There are 400 Marsaut Safety lamps in use.

Officers.

Archie Ferguson, manager.

James Greenwell, underground manager.

Hugh McLellan, overman.

John W. Miles, overman.

George Morris, overman

Timber used underground Scotia Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	6	4	61847	371082
Booms	6′-8″	4	20169	134460
	8′-0″	5	196	1568
	10′-0″	5	2011	20110
	12′-0″	6	96	1152
	14′-0″	6	27	378
	16′-0″	6	1375	22000
Sleepers		Width of face and thickness		
	4′-0″	3½″ x 3½″	24142	96568

Loyd's Cove Colliery.

This mine is about 950 feet north-west of No 1. There are 4 slopes, 7 feet wide, sunk on the Loyd's Cove seam. This seam overlies the main seam. Endless haulage is in two of these slopes: the empty cars go down No 1 and the full cars come up No 2 slope. No 3 slope is used for a travelling road and pipe-line, and No 4 slope is used for a return air-way. The cover at the shore line is 104 feet. On account of this thin cover the first lift is 3,400 feet from the crop line, in order to give 450 feet of cover. The crop line is 1600 feet from the shore line. The seam is from 5½ to 6½ feet; coal is soft and gaseous. The mine is damp; direction of true dip, east. The roof and floor are shale.

The system of working is bord-and-pillar; rooms, 18 feet wide; pillars, 23 to 25 feet, according to cover. Cross-cuts are driven every 60 feet. The coal is all mined by machines of the Hardie and Whitcomb type. Compressed air is supplied from No 1 colliery

The system of timbering is props-and-caps, sometimes props and-booms—size of timber 4½ inches at the small end.

There are 331 men employed at the colliery, and 25 boys; 288 men and 22 boys in the mine, and 43 men and 3 boys on the surface.

Marsaut safety lamps are used, of which number there are 365

The output during the year was 133,862 tons: of this amount 100,019 tons were mined from rooms, and 33,843 from narrow places.

There were 31,124 ℔ of compressed powder used.

There are 41,700 cubic feet of air a minute in circulation.

Development work.

		Total
No 5 level north	600 feet	1900 feet
No 6 "	220 "	1220 "
No 7 "	320 "	320 "
No 5 level south	195 "	1920 "
No 6 "	75 "	1000 "
No 7 "	420 "	420 "
Main Deeps	230 "	5720 "

Rails in mine.

28 ℔—21,148, feet; 18 ℔—50,105 feet.

I visited this colliery 15 times during the year.

Machinery on surface.

The bankhead of wood.

Samson posts are placed at intervals in the slopes for protection to the men that are sinking.

The ventilating equipment consists of one 15 by 10 feet Capell steel-plate fan, driven by an engine having two 9 by 9 inch cylinders. The engine is geared with a three, five to 1 reduction to the fan. This fan is capable of supplying 150,000 cubic feet a minute, with 5 inches of water gauge.

One tandem compound 14 and 24 by 42 inch engine is used for driving the endless haulage rope. This engine runs 42 revolutions a minute, and is geared 6 to 1 to a bull-wheel shaft, the pinion driven by a friction clutch. This engine is at No 1 colliery.

Compressed air is furnished from a Walker Compressor at No 1 colliery.

The Capell-fan is 15 feet diameter by 7 feet wide—connected by gearing 3½ to 1. Average water gauge reading 8-10 of an inch.

Average thermometer reading 40 degrees.

Average barometer reading 30 inches.

Fan house is built of brick, size 40 by 26½ feet. Actual distance from air shaft—10 feet.

An endless haulage system is installed for taking the coal out of the mine and into the bankhead, located 1,000 feet from the mouth of the slope. Length of slope 4,800 feet and 7 feet wide. Pitch one in eleven. Size of rope 1 1/8 inch in diameter. Weight of empty cars 1,080 lb, capacity one ton. The endless haulage rope delivers the coal from incline and onto the bankhead floor. The tipple, screens and picking belt arrangement is in duplicate, each set being capable of handling about seventy five tons of coal an hour. The full tubs enter a hand operated revolving tipple which dumps the contents of the tub into a steel weigh-tank suspended on a special tank scale: the net weight of the coal being registered in the scale house. The coal after leaving the weigh-tank passes over a bar-screen having an opening of 2 inches. The coal passing through the bar screen is screened over a ¾ inch square-mesh knocking-screen. By this time the coal is separated into three sizes; the coal passing through the bar screen and over the ¾ inch screen is delivered directly into cars. Both the 2 inch coal and the large screen coal is delivered to picking belts, where the coal is picked and transferred to cars. The picking belt has a moveable end so arranged that it can be lowered into the bottom of a fifteen ton hopper to prevent excessive breaking of coal; it is also used in an elevated position as a means of transferring coal into box-cars by the use of a special collapsing chute. The bankhead machinery is driven by an electric motor.

Underground machinery.

One Cameron pump 22 by 10½ by 20; one Northey Duplex pump 18 by 8 by 12 inches, located 1400 feet from slope mouth; three auxiliary pumps located at each lift below this point, operated by compressed air. Maximum quantity of water that can be discharged in an hour is 30,000 gallons.

There are six dams in the mine, size 7 by 6 by 12 feet thick.

Water is supplied from Pottle's Lake, North Sydney.

In case of fire, connection is made with a hydrant placed in the water main.

Officers.

William Tobin, manager.

Daniel Brown, underground manager.

Wm. R. Coll, Overman.

Fred McDonald, overman.

Wallace Caldwell, overman.

Timber used underground Lloyds Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	6	4	54635	327810
Booms	6′–8″	4	32780	218533
	8′–0″	5	1942	15536
	10′–0″	5	8643	86430
	12′–0″	6	1106	13272
	14′–0″	6	102	1428
	16′–0″	6	349	5584
Sleepers		Width of face and thickness		
	4′–0″	3½″ x 3½″	16646	66584
	5′–0″	3½″ x 4″	264	1320

Florence Colliery.

There are 559 men employed at this colliery of which number there are 243 skilled and 212 unskilled in the mine, and 41 skilled and 63 unskilled on the surface. There are also 54 boys employed, 49 of whom are in the mine and 5 on the surface.

The output during the year was 218,622 tons: of this amount 181,241 tons were mined in rooms, and 37,381 tons mined in narrow work. There were 26,316 ℔ of compressed powder used during the year. This mine is entered by three slopes driven parellel to one another, now down 8,885 feet. One is used for haulage, one for a travelling road, and the other for a return airway. The seam is from 4½ to 5½ feet thick. The coal is gaseous. The floor and roof are shale. The mine is dry in parts and water tubs with spray pipes are used. The seam dips one in ten to one in twelve. Direction of true dip, north 60 degrees east. The coal is mined by coal cutting machines of the Ingersoll type, operated by compressed air. There are 38 of these in the mine.

Method of working is bord-and-pillar, width of rooms 20 feet, pillars 25 to 40 feet thick. Crosscuts are driven every 60 feet.

System of timbering is props-and-caps, sometimes props-and-booms, according to the condition of the roof. Size of timber used is 4½ inches, small end.

I visited this colliery 18 times during the year.

There are 170,063 feet of 18lb and 38,227 of 28 lb rails in the mine.

There are 510 Marsaut safety lamps in use.

Surface machinery.

The bankhead is built of wood.

One tandem compound engine, 14 by 24 by 42 inches, used for driving endless haulage system which takes the coal from the mine and delivers it onto the bankhead. Length of haulage way, 8,885 feet, width 10 feet. Size of ropes 1⅛ inch in diameter. Weight of empty car, 1080 lb, capacity, one ton.

Ventilating equipment is in duplicate.

One steel Capell fan, 15 by 7½ feet, directly connected to a twelve and 24 by 24 tandem compound engine. This fan is delivering 48,900 cubic feet of air a minute, water gauge 2.2 inches.

One auxiliary fan, 10 by 6 (Murphy) belted to a 12 by 12 inch side-crank engine, running at 116 revolutions, it will furnish 59,900 cubic feet of air a minute, 1.5 inch water gauge.

Average thermometer reading—55 degrees.

Average barometer reading—30 inches.

Capell fan house 29 by 24 feet, built of brick. Murphy fan house, 23 by 16 feet, of wood, is close to the shaft. Distance of Capell fan house from the shaft is 23 feet. Length of fan-drift 29 feet, area 60 square feet.

There are two sections in the mine, north side and south side. The air is divided once at the bottom of the slope, each side of the mine has a separate split of air. Asbestos fibre brattice cloth, board stoppings and brick stoppings are used in this colliery.

The tipple, screen and picking–belt arrangement is all in duplicate, each being capable of handling 75 tons of coal an hour. The full tubs are dumped by a revolving tipple into a steel weigh-tank suspended in a special scale tank. The net weight of the coal being registered in the scale house. The coal after leaving the weigh-tank passes over a bar screen having an opening of two inches. The coal after passing through the bar-screen, is screened over a ¾ inch square-mesh knocking-screen. This process separates the coal into three sizes, the coal passing through the bar screen and over the ¾ inch screen, is delivered to a belt-conveyor running across the screen house. The two inch coal and the large screened coal are delivered to picking belts where they are cleaned and transferred to the cars.

The picking belt has a movable end so arranged that it can be lowered into the bottom of the 15 ton hoppers to prevent excessive breakage of coal; it is also used in an elevated position for loading box cars.

One Norwalk compressor, air cylinders, 38 by 22 inches, steam cylinders, 20 by 40 and 36 inch stroke, capacity 3,500 cubic feet of air a minute at 80 revolutions. One cross-compound Walker compressor, air cylinders, 36 and 22 inches, steam cylinders, 21 and 40 inches, stroke 48 inches, capacity 3000 cubic feet of air a minute at 58 revolutions. This compressor is connected to a surface condenser, circulating–water being taken from a salt water pond, and discharged through the boiler house for flushing the ashes to the dump.

Six 232 h. p. Sterling water-tube boilers, pressure 150 ℔ to square inch, forced draft. One 110 by 48 inch Sheldon steel-plate fan directly connected to an 8 by 10 vertical centre–crank engine, which furnishes 60,000 cubic feet of air a minute, when operating against a pressure of 1.5 oz of water. This draft plant is used to facilitate the burning of wash-slack and coke-breeze which are used as fuel at this plant. One brick-lined steel-plate stack, 110 feet high and 8 feet internal diameter, is connected to these boilers. One induced draft Sirocco fan, built by the Robb Engineering Co., Amherst, to handle gas from six 232 h. p. Sterling boilers.

Machinery underground.

There are thirteen 5 by 6 inch double friction drum engines. Two 7 by 9 inch double friction drum engines. One 6 by 8 inch double friction drum engine. These engines haul the coal out of the levels and headways to the main haulage road.

One Northey pump 12 by 6 by 14 inches, at No 3 lodgement.

One Northey pump 12 by 6½ by 14 inches, at No 6 lodgement.

Two Northey pump 4½ by 2½ by 4 inches, at No 8 south.

One Cameron pump 10 by 8 by 4½ inches, at No 9. lodgement.

Two Cameron pumps 10 by 4½ by 8 inches, at face of slopes.

One Dean pump 8½ by 5 by 10 inches, at No 12 lodgement.

Pumps are operated by compressed air. Maximum quantity of water that can be discharged in one hour, is 24,000 gallons.

This colliery is supplied with water from North Sydney main line.

In case of fire, connection can be made with the main line.

Development work.

		Total
No 8 south	120 feet	3400 feet
No 9 south		3430 "
No 10 south		3180 "
No 11 south	70 "	2700 "
No 12 south	350 "	2540 "
No 13 south	50 "	1920 "
No 14 south	628 "	1520 "
No 1 angle deep level	150 "	2900 "
No 2 angle deep level	210 "	1940 "
Deeps off angle deep	210 "	660 "

Officers.

Angus A. Fergueson, manager

Robert Dickson, underground manager.

Solomon Dewfall, overman

Hugh Dickson, overman.

John Hunter, overman.

Timber used underground, Florence Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	6	4	101363	608178
Booms	6′–8″	4	22081	147207
	8′–0″	5	599	4792
	10′–0″	5	1202	12020
	12′–0″	6	1463	17556
	14′–0″	6	235	3290
	15′–0″	6	417	6255
	16′–0″	6	1445	23120
	18′–0″	6	6	108
Sleepers		Width of face and thickness		
	4′–0″	3½″ x 3½″	34000	136000

Description and number of lineal feet of other kinds of timber used underground:—

61940 pieces 2 feet caps, 4 inches small end, 123780 lineal feet.

DOMINION NO 1 COLLIERY.

This mine is entered by a shaft on the Phalen seam near the southern end of Lingan Bar. The shaft is 154 feet deep, 10½ by 24 feet. It is divided into two compartments—one of which is used for a man-shaft and is walled off from the coal shaft. The depth of the material shaft is 135 feet, 11 by 18 feet.

The fan-shaft is 11 feet in diameter, 143 feet deep. The mine is gaseous, roof and floor are shale, seam pitches 1 foot in 14 feet. The direction of the true dip is north 89 degrees east: the coal is 8 feet thick: the mine is damp, except in a few places. Accumulations of dust are loaded into boxes and sent to the surface. There is no spraying in the mine. The method of working is bord-and-pillar: rooms 20 feet wide, pillars from 25 to 40 feet. Most of the pillars are now 40 feet thick. The timber used is 5 inches at the small end. The method of timbering is props-and-caps: sometimes props-and-booms, according to the condition of the roof. The timber is gotten in the province. There are 627 men employed at this colliery, of which number there are 300 skilled and 193 unskilled employed in the mine, and 94 men on the surface. There are 40 boys employed, 30 of whom are employed in the mine, and 10 on the surface.

The output during the year from rooms was 388,401 tons, from narrow places 86,195 tons, and from pillars 105,954 tons, making a total output of 580,550 tons, which is a decrease from last year of 4,408 tons.

There were 79,072 lb of bull-dog compressed powder and 6108 lb of Monobel powder used during the year.

Coal is mined by machines, there being 9 Jeffrey air drills, 15 Hardy shearing machines, and 19 undercutting machines of the Ingersoll type in use.

The mine is divided into two sections, south-side and angle deep. There are 270 men and boys on the south side and 253 men and boys on the angle deep

Surface machinery.

There are three fans at this colliery, one Dixon fan of the Guibal type, 24 feet diameter, width of blades 6 feet 6 inches, driven by an 18 by 24 inch Buckeye engine. This fan is also provided with an auxiliary 16 by 30 inch Jencke's engine, which, in the event of an accident to the Buckeye, can be coupled in a few minutes.

The other two fans are Murphys, and are held in reserve in the event of it being at any time necessary to stop the Dixon. One of the Murphys is 12 feet in diameter, width of blades 6 feet, driven by an Atlas engine 19 by 16 inches. The other is 8 feet in diameter; width of blades 5 feet, driven by a 10 by 12 inch Matheson-engine.

Dickson fan house, 68 by 29 feet, of brick. The size of the 12–feet Murphy-fan-house is 23 by 15 feet, of wood. The 8–feet Murphy-fan-house is 16 by 12½ feet, of wood.

Fans are connected directly to the engine.

Actual distance of fan-house from shaft is 10 feet.

Average water gauge is 2.2 inches.

Average thermometer reading—56 degrees.

Average barometer reading—29.90 inches.

One coal hoisting engine 20½ by 54 inches.

One man–engine 15 by 30 inches.

Two haulage engines 26 by 60 inches.

Three Ingersoll compressors each of them having a capacity of 2500 cubic feet of free air a minute.

One 100 k. w. electric, 110 volt generating unit.

Two 8 by 10 inch Flory engines, one 8 by 10 inch Jencke's engine, one 9 by 10 inch Sampson, engine double drum; and one 6 by 8 inch Jenckes, double drum.

These three engines are in the mine.

Bankhead of wood, pithead frame is of steel.

Man-cage is equipped with an Omeroid detaching safety-hook.

Working load in the coal shaft is nine tons.

Above all landings on the deeps, are automatic safety switches.

The coal passes from the weigh-pan, over a 1¼ inch bar-screen, thence to shaker screen, ¾ inch mesh, thence to travelling picking-belts, 40 feet long by 5 feet wide.

Coal is conveyed to the boilers, by a 14 inch Robbins belt-conveyor.

The boilers are 1696 rated h. p., made up of two 318 h. p. and five 212 h. p. Babcock & Wilcox boilers.

One Underwriter's fire-pump, capacity 500 gallons a minute. One Worthington fire-pump, capacity, 500 gallons a minute.

Twelve hundred feet of 2½ inch standard rubber hose and two hose reels with nozzles. Chemical extinguishers of fire-king type are distributed throughout the surface buildings and in the mine.

A fire brigade of 35 members who train and practice regularly.

The water is supplied from Phalen's Brook, about a mile from the colliery.

Capacity of reservoir on surface is 8,000,000 gallons, located about a mile from the colliery.

There are five pumps in the mine, four of which are at borehole on No 9 south.

One McDougall turbine, 560 gallons a minute.

One McDougall turbine, 400 gallons a minute.

One Northey duplex, 20 by 8 by 24 inches, 500 gallons a minute.

One Northey duplex 14 by 8½ by 10 inches, 300 gallons a minute.

One spare McDougall turbine, 550 gallons a minute, at borehole on No 9 south.

McDougall turbines are operated by electricity. Northey's are operated by compressed air.

Maximum quantity of water that can be discharged in an hour, 105,000 gallons.

Hygredeik Readings, Dominion No 1 Colliery, Jan. to Sept., 1912.

			Humidity.			
	Barometer		Minimum		Maximum	
	Min.	Max.	Intake	Return	Intake	Return
January	29.	30.8	80%	84%	89%	88%
February	29.2	30.2	72%	86%	88%	89%
March	29.23	30.34	79%	88%	100%	94%
April	29.01	30.34	60%	89%	100%	100%
May	29.35	30.24	56%	84%	84%	100%
June	29.34	30.	65%	89%	89%	94%
July	29.26	30.10	68%	70%	94%	100%
August	29.46	30.28	89%	65%	100%	90%
September	29.56	30.38	55%	89%	100%	94%

Cover at face of 10 north level	273	feet
Cover at face of 11 north level	368	"
Cover at face of 12 north level	440	"
Cover at face of angle deep	450	"
Face of No 12 level angle from shore line	3000	"

The quantity of air in circulation is 166,370 cubic feet a minute which is divided at bottom of fan-shaft, one split going south and one going to angle deep. Area of south intake 10 by 9 feet. Area of angle deep intake 10½ by 7 feet.

The stoppings are built of stone, bricks, and boards. Brattice cloth, is used.

Length of fan drift 10 feet: area 36 feet square.

There are 520 Ackroyd & Best safety lamps in use.

Development work during the year.

No 10 levels north off the angle deep	563	feet
No 11 levels north off the angle deep	1288	"
No 12 levels north off the angle deep	1324	"
No 13 levels north off the south deep	525	"
No 14 levels north off the south deep	299	"

Headways.

No 3 headway off No 11 north off angle deeps	464 feet
No 4 headway off No 11 north off angle deeps	550 "
No 5 headway off No 11 north off angle deeps	770 "
No 1 headway off No 12 north off angle deeps	887 "
No 2 headway off No 12 north off angle deeps	404 "
No 6 headway off No 12 north off south deep	298 "
No 4 headway off No 13 north off south deeps	465 "
No 1 headway off No 14 north off south deep	268 "

Deeps.

Angle deeps	1192 feet
Deep off No 13 level north off south deep	339 "

Officers.

John Munroe, manager.

Hector Campbell, assistant underground manager.

Andrew J. Scott, overman.

Archie T. Ferguson, overman.

Joseph Farrell, overman

Dan L. Johnstone, overman.

I visited this colliery twenty-four times during the year.

Timber used underground Dominion No 1 Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	9	6	75840	682760
Booms	14	8	717	10058
	16	8	865	13840
	17	8	68	1156
	20	8	20	440
Sleepers		Width of face and thickness		708254
	4	4″x4″	32055	128220

DOMINION NO 12 COLLIERY.

These slopes are on the Victoria seam, a half mile from the shore, and are down 3,700 feet. Plane-haulage is used: the diameter of rope is 1 inch. Eighteen cars are hauled each rake; capacity of box 2,000 lb tare 850, pounds.

The seam is 6 feet 4 inches thick, soft coal, pitching 13 degrees: direction of true dip, north 38 degrees and 40 minutes east. The roof and floor are hard freestone. The mine is gaseous and damp. There are 102,150 cubic feet of air a minute circulating around the workings, with w. g. 0.7 of an inch, thermometer 50 degrees, barometer 29.50 inches.

There are two air crossings, 6 by 10 feet over the main and back slopes, 150 feet from the mouth of slope.

The fan-house 18½ by 14½ feet, and 8 feet high, is of steel, cupola 4 feet. Distance from air shaft 30 feet.

The mine is supplied with Ackroyd & Best safety lamps, number of lamps in use—380.

There are 53 single cottages and 34 double houses at this colliery.

The output for the year was 322,077 tons: 256,261 tons from rooms and 65,816 tons from narrow work. Used during year, 57,525 pounds of Monobel powder.

The average number of men working underground was 365; 207, being skilled and 158 unskilled workmen. 315 worked by day and 50 by night. There was an average of 60 men employed on the surface.

At present there are 120 working places in the mine.

The advancement of narrow work during the year was as follows:—

		total distance
No 1 west	529 feet	1830 feet
No 2 west	133 "	2018 "
No 3 west	412 "	2287 "
No 4 west	546 "	1940 "
No 5 west	632 "	1080 "
No 6 west	255 "	255 "
No 1 east	1000 "	2150 "
No 2 east	109 "	2740 "
No 3 east	96 "	2540 "
No 4 east	965 "	1200 "
No 5 east	671 "	2740 "
No 6 east	260 "	260 "

Surface machinery.

One Walker fan, 11 feet diameter, width of blades 4 feet, connected to a 95 h. p. Walker engine, size 15 by 30 inches, making 52 revolutions a minute, by five one inch ropes; the driver is 12 feet in diamter and the driven pulley 5 feet. The length of each rope is 55 feet. The engine house is of brick, 45 feet long and 15 feet wide. Length of fan drift is 20 feet, area 50 square feet, size of fan-shaft 14 by 16 feet. Size of air-ways 6 by 12 feet. The ordinary tarred brattice cloth and wooden stoppings are used. The air is divided once at the bottom of the shaft, one split going east and one going west.

One electrically driven, cross-compound Rand compressor, capable of producing 3,300 cubic feet of free air a minute, operated by an 800 h. p. induction motor. One 1,800 h. p. 30 by 48 inches hoisting-engine has been erected.

One 600 h. p. Westinghouse induction motor, making 120 revolutions a minute at full load, and taking a potential of 6,600 volts, and 50 amperes a terminal. This is used to drive a cross-compound Rand compressor 19 by 32 by 30 inches, capable of compressing 3,300 cubic feet of free air a minute to a pressure of 80 ℔ a square inch.

One 16 by 24 inch straight-line Rand compressor, with a capacity of 400 cubic feet a minute.

One 20 by 30 inch straight-line Ingersoll compressor, capacity 600 cubic feet a minute.

There are two 250 h. p. and two 210 h. p. boilers, three are constantly in use and one in repair.

One 30 by 48 inch hoisting-engine, Corliss type, with 8 feet drums, built by the Vulcan Iron Works, Wilkes-Barre, Pa.

The screening plant has a capacity of 1500 tons a day. It consists of two tipples, two picking-belts, one loading belt, and two double shaker-screens, one of the latter with a two inch opening and one with a three-quarter inch opening. Full, and empty car-haul chains. This plant is driven by a five turn continuous rope-drive. The engines is a 12 by 12 inch Goldie, making 250 revolutions a minute.

The machine shop is fitted with lathe, shaper, drill-press, pipe and bolt threading machines and emery wheels, operated by a 6 by 6 inch upright engine, built by I. Matheson & Co., and making 250 revolutions a minute. One 8 by 8 inch Robb-Armstrong engine, making 120 revolutions a minute, supplies power to forge and carpenter shop.

One 6 by 8 inch Robb-Armstrong engine making 300 revolutions a minute, operates a temporary dynamo.

Underground machinery.

One 18 by 18 by 24 inch Knowles pump, 2,100 feet from the surface. Three 7.5 by 4 by 10 inch pumps raise the water from the deeps to the large lodgement. These pumps are operated by air at a pressure of 75 lb a square inch, and are capable of discharging 12,000 gallons an hour. There are no dams in the mine.

There are two reservoirs on the surface, the largest having a capacity of 6,000,000 gallons, the smaller 500,000 gallons.

The water supply is from Kearneys' Lake.

The fire protection service consists of one hose-reel and 1500 feet of hose: one 500 gallon Northey duplex fire-pump, and 6 hydrants with a pressure of 60 lb a square inch: one 40-gallon, Babcock chemical fire-engine, built by the American-La France Fire Engine Co., of Elmira N. Y., and 34 chemical fire extinguishers in suitable places in the mine and on the surface.

Automatic switches and sampson posts.

One compressor house 48 by 78 feet, of brick and steel.

The bankhead is of wood with concrete floor, and the roof and sides are covered with corrugated iron.

Lodgement level 433 feet, total distance 1145 feet.

Main Deep 536 feet, total distance 3700 feet.

Number of rails in mine.

6,676 feet of 60 ℔ rails, 2,154 feet of 30 ℔ rails, and 88,164 feet of 18 ℔ rails.

I visited this mine 12 times during the year.

Officers.

A. R. McDonald, manager.

James Connors, underground manager.

James Campbell, overman.

Michael McLeod, overman.

David Morrison, overman.

Timber used underground Dominion No 12 Colliery
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet.
Pit props	6	5	196	1176
	7		40400	282800
	8		1000	8000
Booms	11		245	2695
	13		4260	55380
	16		206	3296
Sleepers		Width of face and thickness		
	4	4″x4″	29631	118524
	6	6″x6″	400	2400

DOMINION NO 14 COLLIERY.

The slopes are sunk in the Victoria seam, one mile to the east of No 12 colliery and about a half mile from the shore. The two slopes are down a distance of 3,300 feet and are 12 feet in width. Direction of true dip north 38 degrees 30 minutes east: pitch 12 degrees. Thickness of seam 6.5 feet. The seam is gaseous. The mine is damp and no spraying is necessary. The roof is bituminous shale and sandstone, and the pavement is an argillaceous slate covered with from two to four inches of fire clay.

The output during the year was 288,214 tons, an increase of 150,470 tons over last year.

There were 36,939 ℔ of Monobel powder used during the year.

Method of working bord-and-pillar, rooms and pillars each being 20 feet wide, to a depth of 290 feet, and the pillars 35 feet below this depth.

System of timbering props-and-caps, and booms-and-props, where necessary.

The minimum diameter of small end of props is 5 inches.

There are 450 men employed at this colliery of which number there are 200 skilled and 190 unskilled, employed in the mine, and 60 on the surface.

Development work.

		total.
No 1 east level	600 feet	2367 feet
No 2 east level	1000 "	2250 "
No 3 east level	1590 "	2300 "
No 4 east level	1036 "	1126 "
No 5 east level	150 "	150 "
No 1 west level	1390 "	2640 "
No 2 west level	1180 "	2390 "
No 3 west level	1600 "	2260 "
No 4 west level	1376 "	1576 "
No 5 west level	150 "	150 "
Main deeps	800 "	3300 "

The mine is divided into two sections, east and west; there are 140 working places in the mine. Ten new balances were put in operation. Two air courses, one on No 4 level west and one on No 4 level east were driven a distance of 500 feet to No 3 low level.

There are 28 Radial and 10 Ingersoll machines in the mine.

There are 5,400 feet of 60 ℔, 21,213 feet of 30 ℔ and 398,984 feet of 18 ℔ rails in the mine.

I visited this mine 12 times during the year.

Surface machinery.

One Walker fan 11 feet in diameter, width of blades 6 feet, connected by a rope drive to a temporary 30 h. p. induction motor, the driver being 2 feet in diameter and the driven pulley 7 feet. The distance from the centre of motor-shaft to centre of fan shaft is 30 feet. The length of fan-drift is 20 feet and the area 140 square feet. The fan-shaft is 10 by 14 feet. The distance of fan from fan-shaft is 20 feet. Size of airways 12 by 6.5 feet. The air is divided once at the bottom of the slope; one split going east and one going west. Total quantity of air in circulation, 111,000 cubic feet a minute. The ordinary oiled brattice cloth and board stoppings are used.

Average water gauge 1 inch. Average barometer 29.50. Average thermometer 56.

Ackroyd & Best safety lamps are used, of which number there are 430.

One electrically driven, cross-compound, Rand compressor 30 by 19 by 30 inches, compressing 3300 cubic feet of air a minute to a pressure of 80 ℔ a square inch operated by a 600 h. p. Westinghouse induction motor. This motor makes 120 revolutions a minute, at full load, takes a potential of 6,600 volts, and 50 amperes a terminal.

There are two 100 h. p. Robb-Munford boilers in use, and two 50 h. p. I. Matheson & Co. boilers.

One 14 by 20 inch hoisting engine built by the Jenckes Machine Co.Two picking-belts and one loading-belt driven by a 20 h. p. Westinghouse induction motor. Two shaker-screens driven by a 20 h. p. Westinghouse induction motor. Two revolving tipples driven by a 20 h. p. C. G. E. Co., induction motor. The main car-haul driven by a 30 h. p. C. G. E. Co., induction motor. A 15 h. p. induction motor of the C. G. E. Co. type, is used to haul the empty trip over the brow. An electric hoisting engine, maximum h. p. 1300.

A colliery office 32 by 25 feet, and a building 50 by 22 feet; 21 by 22 feet of the latter being used as a district superintendent's office and telephone-central, and the remainder as firemen's club rooms and hose-reel house. A machine shop, 36 by 45 feet, forge 45 feet by 56 feet, ambulance house, 33 by 13 feet: stables twenty seven by thirty seven feet: compressor house, 48 by 78 feet: fan-engine house, 17 by 50 feet, the last two of brick. The bankhead is of wood, roofed and shingled with corrugated iron, and has concrete floor.

Underground machinery.

One 16 by 9 by 33 inch Cameron pump, 1600 feet from the surface. Three 7 by 4.5 by 12 inch Cameron pumps, raise the water from the deeps to the lodgement. These pumps are operated by air at a pressure of 70 h. p. a square inch, and discharge about 12,000 gallons an hour.

There are two small temporary dams in the mine. A reservoir on the surface holds about 2,500,000 gallons.

The travelling road is in good condition.

The fire protection service consists of one hose-reel and 1500 feet of hose: one 500-gallon Underwriter's fire pump: 4 hydrants with a pressure of 100 ℔ a square inch; one Babcock chemical fire-engine, built by the American LaFrance Fire Engine Co., Elmira, N. Y., 18 chemical fire extinguishers at suitable places in the mine and on the surface. The water supply is from Kearney's Lake.

The following colliery buildings were erected during the year: Officials office, size 29 by 15 feet: carriage house size 50 by 16 feet, engine house 53 by 26 feet.

There are 44 single and 76 double dwelling houses, and the manager's, underground manager's, and engineer's houses.

Officers.

Bart. Connors, manager.

John McIntyre, underground manager.

J. Pickup, overman.

Michael Morrison, overman.

Hugh. McNeil, engineer.

Timber used underground Dominion No 14 Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	No of pieces	Total Lineal feet
Pit props	8	5	66595	532760
Booms	11		1153	12683
	12		3302	39624
	13		1121	14573
	14		2549	35686
	16		669	10704
Sleepers		Width of face and thickness		
	4	4″x4″	35091	140364
	6	6″x6″	1237	7422
	8	6″x6″	2088	16704

DOMINION NO 15 COLLIERY.

The slopes are sunk on the Lingan seam about 3,700 feet from the shore line and 400 feet east of No 14 colliery, running parallel with No 14 slopes. The length of slope is 2,950 feet and width 12 feet. Direction of true dip, north 39 degrees 30 minutes east. The seam is 5.5 feet thick and the pitch is 20 degrees. The mine is damp and no spraying system is necessary. The roof is shale and clay with alternate bands of sandstone, and the floor is very hard clay. The seam is gaseous. Method of working is bord-and-pillar, the rooms are 20 feet wide, the pillars are 20 feet thick in the upper sections, increasing in thickness to the deep. System of timbering is booms-and-props, and props-and-caps. The minimum diameter of small end of props is 5 inches.

The output during the year was 116,615 tons; 42,557 from rooms; and 74,058 tons from narrow places—increase of 89,091 tons over last year.

There were 28,430 ℔ of Monobel powder used during the year.

There are 132 working places in the mine. There are 357 men employed underground, of which there are 230 skilled, and 127 unskilled. There are 60 men on the surface. Ackroyd & Best safety lamps are used, of which number there are 357. This mine is working double shift.

Development.

		Total
No 1 west levels	1200 feet	2100 feet
No 2 west levels	1400 "	1700 "
No 3 west levels	400 "	400 "
No 4 west levels	100 "	100 "
No 1 east levels	1150 "	2050 "
No 2 east levels	1200 "	1800 "
No 3 east levels	700 "	700 "
No 4 east levels	100 "	100 "
Lodgement	225 "	225 "
Deeps	1350 "	2950 "

During the year four balances were driven a distance of 450 feet each, and one balance 510 feet, and eight balances 75 to 400 feet, making a total of 4065 feet.

There are in the mine 3,600 feet of 60 ℔ rails, 2,000 feet of 30 ℔ rails and 69,760 feet of 18 ℔ rails.

Trip haulage is used, averaging 10 boxes with a capacity each of 1850 ℔, and tare 850 pounds.

One thousand feet of the slope have been relaid with 60 ℔ rails: two landings relaid with 60 ℔ rails: brushed 900 feet main deep: built two air crossings 7 by 12 feet.

I visited this mine 12 times during the year.

Surface machinery.

One Walker fan 14 feet in diameter. This fan is situated 35 feet from shaft. It is connected to a 50 h. p. motor by a belt-drive. The air shaft 12 by 14 feet, and 42 feet deep has been concreted from top to bottom. The airways are 5 by 10 feet. The air is divided once at the bottom of the down cast, one split going east and one west. Quantity of air in circulation, 60,000 cubic feet a minute. The ordinary oiled brattice cloth and board and brick stoppings are in use.

Average water gauge is 1.5 inch. Average thermometer 65 degrees Average barometer 29.50 inches. Length of fan drift 35 feet. Area 140 square feet. The fan house is built of brick, size 13 by 44 feet.

One 150 h. p. 14 by 20 inches Jenckes haulage-engine.

One Norwalk compressor with compound air end, capacity two thousand cubic feet a minute. Four Matheson & Co. boilers

The bankhead is of wood, covered with corrugated iron, and has a concrete floor. It is 588 by 43 by 18 feet. The machinery consists of two picking-belts. Two revolving tipples. Two shaker screens and two feed belts driven by 30 h. p. C. G. E. Co. motors. The loading-belt is driven by a 20 h. p. motor. There are three car-hauls driven by a 25 h. p. motor. One 10 h. p. motor used for pulling trips over brow. The auxiliary power plant consists of one generator capable of producing 6,600 volts with one exciter attached. This plant is run by one Robb compound upright engine.

The fire protection service consists of one hose-reel and 800 feet of hose. One 500 gallon Underwriter's fire pump, and four hydrants, with a pressure of 100 ℔ the square inch. Also 22 chemical fire extinguishers placed at suitable places on the surface throughout the mine. The water is obtained from Kearney's Lake.

The buildings at this colliery are:—One wash house 30 by 60 feet: one lamp house 14 by 22 feet: one blacksmith shop 28 by 43 feet: carpenter shop 28 by 43 feet: office 28 by 38 feet: fanhouse 14 by 44 feet: stables 35 by 50 feet: electric auxiliary-engine house 22 by 45 feet: boiler house built of brick 41 by 55 feet: magazine 24 by 35 feet: detonator house 6 by 8 feet. The last two named houses are built of concrete.

There are 46 double dwellings at this colliery, one manager's house and one large boarding house.

Underground machinery.

Water is pumped from the mine by a 14 by 7 by 24 inch Cameron pump, with an auxiliary 14 by 5.5 by 18 inch Cameron pump provided in case of emergency—, these pumps are situated ed 1500 feet from the surface. Four 7 by 4.5 by 12 inch Cameron pumps raise the water to the main lodgement. These pumps are operated by air at a pressure of 70 ℔ the square inch, and discharge about 12,000 gallons an hour.

There are two small temporary dams in the mine. A reservoir on the surface holds about 2,500,000 gallons.

Four 7 by 10 Jenckes engines.

Officers.

M. McIntosh, manager.
A. Lind, underground manager.
Robert Lormier, overman.
M. Morrison, overman.
M. J. McNeil, overman.
Norman McDonald, surface foreman.
Archie McDonald, chief engineer.

Timber used underground Dominion No 15 Colliery
Year ended September 30th, 1912.

Class of Timber		Diameter small end inches	Length in feet	Total Lineal feet
Pit props		5	9809	
			4109	
			4179	
Booms			4484	
			142	
			3559	
			1080	
			3584	
Sleepers		Width of face and thickness		
		4"x4"	17275	
		6"x6"	216	50181
		6"x6"	2464	

DOMINION NO. 16 COLLIERY.

This mine began operations on January 17th, 1911. The daily output has now reached 700 tons. Two slopes are sunk on the Lingan seam, about 400 feet east of No. 12 colliery and running parallel to No. 12 slopes. The seam is about 5 feet 5 inches thick; the coal is hard and is pitching about 20 degrees. Direction of true dip north 33 degrees east. The roof is of shale and clay alternate with bands of sandstone, the floor is of very hard clay. The seam is gaseous. There is no spraying system and the mine is damp. Length of slope is 2,570 feet, 12 feet wide. Method of working is bord-and-pillar, width of rooms, 20 feet; width of pillars 20 to 35 feet.

System of timbering is booms-with-props and props-with-caps; minimum diameter of small end of props is 5 inches.

The output during the year was 92,864 tons, an increase over last year of 84,076 tons. Of this amount 66,718 tons were from narrow work and 26,146 tons from rooms. There were 26,100 lbs. of Monobel powder used during the year. There are two sections in the mine, east and west. There are 385 men employed at this colliery, 360 in the mine and 25 on the surface.

Ackroyd and Best safety lamps are used, of which there are 260.

This mine is worked double shift.

Machinery on Surface.

One 300 h. p. electric haulage engine. One 7 by 10 Lidgerwood engine.

One McEachern fan (temporary) driven electrically by belt drive.

Size of airway 5 by 10 feet. Quantity of air in circulation, 40,000 cubic feet a minute. The ordinary oiled brattice cloth and board stoppings are used.

A temporary bankhead 100 feet long from knuckle to tipple, built of wood: wash-house 15 by 30 feet: stables 12 by 24 feet: lamp-house 12 by 15 feet: office 10 by 12 feet: boiler-house 15 by 35 feet: engine-house 20 by 32 feet, have been erected since January 1911.

The fire protection service consists of 4 fire-kings, and water buckets placed in different buildings. One hose reel 600 feet. The water is from the same source as that of No. 12.

Underground machinery.

One 12 by 6 by 18 inch Blake pump, 600 feet from the surface: four 7 by 4.5 by 12 inch Cameron pumps, raise the water from the deeps to a temporary lodgement. These pumps are operated by air at a pressure of 75 ℔ to the square inch, and discharge 7,000 gallons an hour.

There is one dam in the mine, capacity 200,000 gallons. Power for the pumps is from No. 12 colliery. The water supply is from the reservoirs at No. 12 colliery.

Four, 4 by 7 by 10 inch Lidgerwood engines.

Rails in mine:—

3,600 feet of 60 ℔ rails, 3,800 feet of 30 ℔ rails, 42,000 feet of 18 ℔ rails.

A trip haulage with a rake of 8 boxes is used. Capacity of box 1,900 ℔ tare 800 ℔, size of haulage rope 1 inch.

I visited this mine 12 times during the year.

Development work:—

No. 1	West Level	1650	feet.
No. 2	" "	1050	"
No. 3	" "	550	"
No. 4	" "	100	"
No. 1	East "	1500	"
No. 2	" "	1300	"
No. 3	" "	450	"
No. 4	" "	100	"
Main deep		2570	"

Officers:—

M. S. Beaton, manager.

J. H. Oliver, underground manager.

Stephen McNeil, overman.

Thomas Kavannagh, overman.

A. A. McLellan, overman.

Timber used underground Dominion No. 16 Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Props	6′	5	384	2304
	7′		14971	104797
Booms	11′		3352	36872
	13′		4671	60723
	16′		239	3824
Sleepers		Width of face and thickness		
	4′	4′x4′	14883	59532

Sydney Coal Co.

This mine is at Indian Cove near North Sydney. The mine is entered by a level 10 feet wide, driven from the crop 2,950 feet. The seam is 4 feet 6 inches thick, pitching 7 degrees; direction of true dip north 10 degrees east. The coal is soft and free from gas. The roof is hard shale, the floor, fire-clay. The mine is damp with natural drainage. Rooms are turned off at right angles and driven to the rise; method of working, bord-and pillar; rooms, 18 feet wide; pillars from 4 to 8 feet thick. Thickness of cover is about 50 feet. The system of timbering is props-and-caps. The output during the year was 4,800 tons, an increase of 800 tons over that of last year.

There were 800 lb of bull-dog compressed powder used during the year. There are 18 men employed, 4 on the surface and 14 in the mine.

The water for the plant is supplied from a small brook near by. The ordinary brattice cloth is used, and the stoppings are of wood. The airways are 5 by 10 feet, and the air-shaft 8 feet in diameter. About 6,000 cubic feet of air a minute is circulating in one continuous current. The ventilation is natural.

Surface machinery:—

One double horizontal engine, 20 h. p.; tail-rope haulage. Size of rope 5/8 of an inch. Weight of empty car, 750 lb; capacity of car 1,750 pounds. One upright tubular boiler, 30 horse power.

Rails in Mine.

There are 1,200 feet of 20 lb rails, 1200 feet of 18 lb rails, and 5,520 feet of 12 lb rails.

I visited this colliery 10 times during the year.

Timber used underground Sydney Coal Company Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Props	4′	55	600	2400
Sleepers		Width of face and thickness		
				2400

COLONIAL MINE.

This mine is about a half mile from the Little Bras d'Or bridge on the Bras d'Or Lake. The mouth of the slope is about 200 feet from the water and for vessels drawing up to 19 feet, the shipping situation is unexcelled. The new extension of the I. R. C. is within a half mile of the mine. There are 28 men employed at this colliery during the year, 4 in the mine, 24 men on the surface at construction work.

The output was 2,412 tons. The quantity of explosive used, 769 ℔ compressed powder. The method of working is bord-and-pillar, rooms 20 feet wide, pillars from 12 to 20 feet according to cover. The system of timbering is props-and-caps; where roof is bad, booms and props are used.

There are 20 working places in the mine, in two sections, north and south.

Length of slope 1320 feet, 9 feet wide. Direction of true dip south 80 degrees east. Thickness of seam 4 feet 9 inches: coal is soft, the mine is damp and no spraying system is necessary. The roof is of sandstone and the floor, fire clay.

Rails in Mine.

There are in the mine 9,900 feet of 28 ℔. rails and 2,680 feet of 12 ℔ rails.

Surface machinery:—

One steel-plate fan, blast wheel 64 inches in diameter, connected direct to a 10 h. p. Kalamazoo vertical-engine. This fan produces 20,000 cubic feet of air a minute, w. g. 1.8 inches. Quantity of air in circulation 17,500 cubic feet a minute. The ordinary brattice cloth is used to conduct the air to the working faces.

The boiler plant consists of two return tubular boilers of 80 h. p. each. One hoisting engine 50 h. p. One Flory engine, 10 by 12, double cylinder, friction drum. One Lenoard-Ball automatic cut-off engine. This engine will develop 60 h. p. at a speed of 250 to 300 revolutions a minute.

One engine house 12 by 36 feet, with 9 feet post. One stable 20 by 30 feet, with 12 feet post. One house over slopes 100 by 10 feet, with 7 feet post. One magazine 8 by 10 feet. One house over wharf 40 by 60 feet, post 6 feet 6 inches.

Underground machinery:—

Two Cameron pumps-one 12 by 13 by 7 inches, capacity 200 gallons a minute: one 12 by 13 by 6 inches, capacity 150 gallons a minute. Maximum quantity of water that can be discharged in an hour 6,000 gallons. Capacity of reservoir on surface, 187,500 gallons.

Trip haulage is used, 5 cars on rake: weight of empty cars 840 ℔, capacity 1900 pounds.

Open lights are used.

Swinging samsons, and switches are used and are placed at intervals in the slope.

The works are supplied with Phoenix fire extinguishers.

I visited this mine twelve times during the year.

Officers.

Thomas Carr, underground manager, and
acting manager.

William McGillvary, chief engineer.

The Briquette plant that was under construction last year, is completed and in operation. Capacity 20 tons an hour.

This plant was built by Ateliers-Zimmermann-Hanrez & Company, Belgium, and commenced operations on the first of October.

The briquettes are composed of coal and pitch in the proportion of 93 parts to 7; the coal and pitch are carried in their respective conveyors and deposited in the mixer, which operates in much the same way as a cement mixer. The mixture is then carried to conveyors, which bring it up to the cylinders, between which it is pressed into clam-shaped bodies weighing two or three ounces each. These are deposited on an endless belt and carried to another conveyor, which carries them into the cars for shipment.

Timber used underground Colonial Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end small end inches	Number of pieces	Total Lineal Lineal feet
Props	6	4½	6 doz.	432
Sleepers		Width of face and thickness		
	4 feet	4x4½′	48 doz.	2304

MacKay Mine.

This mine is operated by the Colonial Coal Company.

The output during the year was 32,802 tons—an increase of 3,721 tons over last year.

There was 17,350 ℔ of bull-dog powder used during the year.

Method of working is bord-and-pillar: rooms 20 feet wide, pillars vary in thickness from 12 to 20 feet, according to cover. There are 25 working places in the mine, in two sections, north and south.

System of timbering is props-and-caps, sometimes props-and-booms, according to condition of roof. The timber is Cape Breton product. This mine is about two miles to the westward of North Sydney. The seam is 4 feet thick, soft coal, free from gas. The roof is hard clay and sandstone, and the floor is fireclay. The mine is damp, pitch of true dip north 51 degrees east. The pitch of the slope is 10 degrees 30 minutes, length of slope 1,250 feet, width 9 feet.

Plane haulage is used: size of rope ⅞ of an inch: weight of empty cars, 750 ℔, capacity 1,400 pounds.

There are in the mine 1,200 feet of 28 ℔, 600 feet of 21 ℔, 314 feet of 18 ℔, and 15,556 feet of 12 ℔ rails.

Surface machinery:—

One Sheldon fan, 6 feet in diameter; width 3½ feet, capacity 20,000 cubic feet a minute, connected direct. There are 9,000 cubic feet of air a minute circulating in one continuous current: size of airways 5 by 6 feet. The fan is alongside the shaft. The ordinary brattice cloth and board stoppings are used. Size of fan house 12 by 9½ feet with 8 feet post. One fan engine 6 by 9 inches.

One tubular boiler of 120 h. p. One upright boiler of 80 h. p. One boiler 200 h. p.

One hoisting engine 7 by 12 inches. One electric hoist 50 h. p. One 5 h. p. induction motor. One 75 h. p. electric induction motor, geared to the briquetting machinery which consists of three separate elevators, two distributing tables, one disintegrator, one press and mixer. One 60 h. p. Leonard-Ball engine 19 by 12 inches, belted to a 45 kwt. Westinghouse generator. All the buildings on the surface are lighted by electricity and the mine is supplied with electric power.

Underground machinery:—

One Cameron pump, capacity 4,500 gallons an hour. One Fairbank's pump, capacity 4,500 gallons an hour. One Worthington pump, capacity 1,800 gallons an hour. The Cameron pump is operated by steam, the Fairbank's and Worthington pumps are operated by electricity.

Bankhead is of wood. One bar screen 15 by 14 feet, ¾ inch square mesh. The water supply is obtained from Pottle's Lake, North Sydney. There are 61 men employed, 46 in the mine and 15 on the surface. In case of fire, connection can be made to hydrant on water main.

Officers:—

David Rorison, manager.

Mark McDonald, underground manager.

James W. Weir, engineer.

Anthony Gannon, surface foreman.

The briquette plant at this colliery, burned to the ground on the 12th day of July last, will be in operation again about the 1st of November. The capacity of this plant is 10 tons an hour. The size of the building is 45 by 33 feet, 25 feet post. There is also an ell of 12 by 30 feet for the motor.

The plant is electrically driven, having a motor of 75 horse power. The coal and pitch are crushed separately and dropped into pockets whence they are conveyed by elevators to distributing tables. When the mixture leaves the tables, it is dropped into the disintegrator, then conveyed by an elevator to a mixer where it is heated to melt the pitch. Then it is conveyed by a spiral conveyor to the press where the briquettes are finished.

I visited this mine twelve times during the year.

Yours truly,
NEIL A. NICHOLSON.
Deputy Inspector of Mines.

Report of Accidents in Coal Mines of Nova Scotia, Cape Breton Northern District, Year ended September 30, 1912.

No.	Date of Accident.	Name of Mine	Name of Company	Name of Person Injured.	Age	Occupation of Person Injured.	Cause of Accident.	Nature of Injury.	Verdict of Coroner's Jury
....	Oct 2, 1911	Scotia	N. S. Steel & Coal Com.	Charles Myers	23	Miner	Fall of stone	Leg broken	...
....	" 12 "	Dominion No 1	Dominion Coal Company	Robt. Brown	35	Trip rider	Run over by trip	Broken leg, fracture of skull, internal injuries	Accidental
....	" 26 "	" 12	" " "	Stephano Cibarro	26	Loader	Fall of stone	Killed instantly, fracture of skull	"
....	Nov. 10 "	" 1	" " "	Mario Trevison	20	S. & Loader	Fall of stone	Broken ribs, etc.	"
....	Dec. 16 "	Princess	N. S. Steel & Coal Com.	Charles Haliday	20	Trip rider	Struck by rope	Leg broke	...
....	" 16 "	Princess	" " "	Roddie Boyd	19	Driver	Hand caught between roof and box	Fingers crushed	...
....	" 19 "	Dominion No 12	Dominion Coal Company	Spiccochi Higo	36	Loader	Struck by empty box	Leg broken above knee	...
....	" 22 "	" 1	Dominion Coal Company	Barnado Zanicol	21	S. & Loader	Fall of coal from face	Laceration of Pelvis	Accidental
....	Jan. 16, 1912	Dominion No 15	Dominion Coal Company	Alex. Gillis	18	Trip rider	Light went out, and caught between timber & box	Back broken	...
....	Feb. 1 "	" 12	" " "	Dan. J. McIsaac	59	Laborer	Taking down boom, stone fell on him	Fracture of leg above knee, two fractures of arm	...
....	" 9 "	12	" " "	Amoiesi Candido	19	Driver	Fell off box and it ran over him	...	Accidenta
....	" 9 "	" 14	" " "	Mike Aranzabuck	29	Driver	horse turned while being unhooked, caught between shafts & box	Compound fracture of both bones of leg	...
....	" 26 "	Princess	N. S. Steel & Coal Com.	John Gaskill	28	Trip rider	Thrown off chain under bx.	Hip dislocated	...
....	Mar. 9 "	Scotia	" " "	Sebastian Farrell	26	Machine runner	Fall of stone	Internal injuries	Accidental
....	" 9 "	Scotia	" " "	Sam Farrell	...	" "	Fall of stone	Killed instantly	Accidental
....	" 23 "	Princess	" " "	Patrick Brogan	21	Trip rider	Caught in rope	Thigh broke	...
....	April 12 "	Princess	" " "	John Sirko	23	Trip rider	Run over by box	Back broken	...
....	" 20 "	Queen	" " "	John Piddle	30	Miner	Fall of stone	Back broken	
....	" 22 "	Dominion No 12	Dominion Coal Company	Freeman Clements	30	Miner	Fall of coal	Skull fractured	Accidental
....	May 28, 1912	Dominion No 12	Dominion Coal Company	Albert Wilkowski	43	S. & Loader	Taking a box off the cage, but failing to get it clear of the cuddy road, the cuddy coming up the balance started the boxand caught deceased between the box and rib	Leg broken and badly cut above knee	Accidental
....	June 15 "	Princess	N. S. Steel & Coal Com.	John Soltys	28	Miner	Fall of coal	Leg broken	
....	" 17 "	Florence	" " "	William Pye	32	Loader	Fall of coal	Leg and arm broken	
....	" 21 "	Princess	" " "	Rod McKinnon	29	Machineman	Fall of stone	Chest crushed	Accidental
....	" 22 "	Scotia	" " "	David Campbell	28	Machine runner	Machine ran over him	Leg broken	
....	" 29 "	Dominion No 15	Dominion Coal Company	Albert Cauffery	42	Miner	Premature shot	Killed instantly	Accidental
....	Aug. 1 "	Dominion No. 1	Dominion Coal Company	James Handrahan	50	Miner	Fall of stone from roof	Broken neck and ribs	Accidental
....	" 7 "	Princess	N. S. & Steel Company	Vincent McKinnon	26	Machinist	Air pipe burst	Head and hip hurt	
....	" 11 "	Scotia	S. S. Steel & Coal Com.	Dan. H. McNeil	18	Pumpman	Fall of stone	Skull fractured	Accidental
....	Sept. 10 "	Queen	" " "	David Robertson	56	Miner	Fall of coal and stone	Killed instantly	Accidental
....	" 24 "	Florence	" " "	Allan Cruinner	28	Loader	Fall of stone	Back hurt	
....	" 26 "	Scotia	" " "	Jno. E. Stephenson	28	Miner	Fall of stone	Killed instantly	Accidental

Westville, Pictou Co., N. S.
October 15th, 1912.

HIRAM DONKIN, ESQ.,
Inspector of Mines, Halifax, N. S.

DEAR SIR:—I beg leave to submit to you the annual report on the coal mines in Pictou County, for the year ended September 30th, 1912.

I regret to have to report 23 accidents during the past year, eight of which proved fatal. Four of these fatal accidents occurred in the Allan Shaft, two in the Acadia Mine, and two in the Drummond colliery. The first fatal accident occurred on October 14th last, in the Acadia Mine, when Thomas Roy, 17 year old, who was tender at the bottom of a jig, taking the boxes off the chain, and turning them on flat sheets, was killed. He hooked on an empty, and signalled, when the loader shoved the full box over the brow of the jig; the chain was not attached to the full box, it ran and struck Roy injuring him fataily. He died the same night. The second fatal accident occurred at Allan Shaft, No. 1, when Wm. Archibald Cameron age 23, was killed under the bankhead. He was a carpenter, and was working with other men, putting in a new shaker-screen, and while in the act of holding a piece of timber, he stepped back, in doing so, his clothes caught on a wheel on the main driving shaft of the screens and picking-tables. This shaft was running 120 revolutions a minute. He was carried around until the machinery was stopped, but the man was dead. The third fatal accident occurred on January 23d, 1912, in Allan Shaft No. 2 when Wm. Mueller, 34 years old, was killed. Mueller, his partner, and loader, had started to draw a pillar in No. 1 balance on the northwest side of Allan Shaft, No. 2 in No. 5 bord. About 1.30 in the afternoon, a fall of coal, partly covered him. When taken out, he spoke, but died about twenty minutes after. The doctor could not find a bruise on any part of the body. The jury of inquest's verdict was, that he died of shock.

The fourth and fifth fatal accidents occurred on March 26th, 1912, in the Drummond Colliery, when Wm. B. Muirhead and James Spelman were killed, and James Lauchlin and Norman McLeod, night overmen, were injured. They with 15 others, were cleaning away a fall, timbering and repairing the tracks on No. 1 slope. When the empty trip was coming from the surface, one of the boxes uncoupled and ran to where the men were at work. Spelman was putting in a roller when the box struck him, killing him instantly. It struck Lauchlin, breaking his leg, and otherwise injuring him. It then switched on to the north track, where it struck Wm. B. Muirhead, killing him, and broke one of Norman McLeod, night overman's, legs. The sixth fatal accident occurred on June 15th, 1912, in the Acadia Mine, when Henry Taylor aged 56 was injured, and died the same afternoon. He was trapping on No. 12 level, south, near the sinking in No. 13 lift. The deceased opened the door to let the horse out with a full trip. He then went to the top of the sinking to see if the way was clear for the horse to get out. In the meantime the horse was coming out, and he thinking the trip was coming up the sinking, tried to stop the horse by standing in front of him. The horse knocked him down, and the full trip struck him, crushing him severely around the heart. The seventh fatal accident occurred on July 13th, 1912, in the Allan Shaft No. 2, when Arthur Hayman, 25 years old, bottomer, fell down the shaft from the 500 feet to the 962 feet bottom. There are two bottomers at the 500 feet. On the day of the accident Hayman had instructions from the underground manager to go to the surface for timber. He started to the surface, and was not seen alive afterward, on being missed, search was made for him and his body was found about two hours later, in the sump in the 962-feet bottom. The eighth fatal accident occurred on July 30th, 1912, in the Allan Shaft No. 2, when Jas. D. McDonald, 24 years old, was fatally injured by a fall of top coal, in No. 7 bord, No. 1 balance, north-west side of No. 1 shaft, Ford pit seam. He was loading a box, there was a boom held up by hitches, cut in the rib, until they could get props under it. McDonald was clearing away a place for the prop, when the top-coal fell on him, crushing his body, and breaking his leg above the knee. He was immediately taken to Aberdeen Hospital but died before reaching there.

Fatal Accidents:—

Falls of coal or stone	2
Runaway boxes	4
Falling in shaft	1
Caught by revolving shaft, surface	1

Minor Accidents:—

Falls of coal or stone	7
Runaway boxes	5
Cages on balances	3

ALBION MINES.

Pictou County.

Owned and Operated by the Acadia Coal Co.

The new steel bankhead mentioned in my last report has been completed, and put in operation on the first week in July. The new bankhead at the McGregor slope has also been completed, and connected with Third-seam bank. It has been in operation since the 27th of May; on the same day the new electric hoisting-engine began work. The new bankhead has steel framing, roofed with wood, and covered with corrugated iron. The sides are corrugated iron, down to the level of the bank floor. The height from ground to floor is 24 feet, there are upright supports every 15 feet; the height from floor to top of bank is 23 feet, supported by steel girders, every 15 feet. From the mouth of the slope to the brow of the bankhead is 75 feet, at an angle of 15 degrees. It is 20 feet wide, for 45 feet into the bank, where it is widened to 35 feet, height 29½ feet. At this point there is another floor to take the empties as they come from the tipples, which are on the second floor. The bankhead here, forms a right angle, and extends for 160 feet, and connects to a steel trestle from the McGregor-slope bankhead, 320 feet long, and 34 feet high at delivery end. This steel trestle from the McGregor slope to the tipple is equipped with Jeffrey haulage, which takes the load against a grade of 7. 7 degrees; the empty grade is 3.1 degrees. The approach from the mouth of the McGregor slope to the brow of the bankhead is 50 feet, at an angle of 17 degrees.

From the brow of the bank to the curve is 135 feet, the length of curve is 50 feet, with a 2 per cent grade toward the bottom of the incline, where the coal is carried away by the Jeffrey haulage. The empties are delivered by the haulage on to an upper floor, they then gravitate to the brow of the bank. There is a double track for full and for empty sets, the empties being carried over the brow of the bank by creeper-haulage. All the approaches are laid with 40 ℔ rails. The full trips of the Third-seam slope are delivered onto the first floor of the bankhead, at a fair rate of speed. When the rope is unhooked, the trip runs to the bottom of the incline, whence it is taken up the incline by grab-haulage, to the upper floor, where the cars run by gravitation, to a kick-back, and from there by gravity to the tipple. The empties then run back to a grab-hauler, where they are lowered from the second floor, on an incline to the first floor, then by gravity to the brow. There is also a grab-hauler on each epmty track to take the empty cars over the brow of the bank.

The screening plant consists of five tipples, one is used for domestic coal, and for one for stone. The main tipple-house is 37 by 160feet, height 42 feet 6 inches. It contains three floors, conveyor floor, height 14 feet 6 inches, on which are the slack bins, slack conveyor, shafting for screens, elevator for slack coal, and the knocking screen for nut and culm coal. These are belt-driven from the main line. The shaking screens are 6 feet 3 inches by 19 feet, and have 1 by 2½ inch holes. They are operated by electricity. The coal after passing over the picking-belt is delivered into the cars. There is a belt conveyor for loading box-cars. The total length of picking-belts from landing of chutes to the cars is 60 feet by 4 feet 6 inches wide. These belts carry 500 tons a day of ten hours. The bankhead is well lighted throughout. In the McGregor seam the boxes carry one ton. The management intend to use, one ton boxes in the Third seam, as soon as the operations below, will allow. All the tipples and other machinery on the bankhead were arranged for one-ton boxes. In the meantime stronger mountings are being put on the boxes so that 20 boxes instead of 10, can be hauled each trip. All the machinery on the surface is run by electricity, as is the haulage on the slope. Great credit is due to the Brown Machine Co., for the manner in which the new electric plant has been installed, and I am pleased to be able to report that no accidents have occurred in connection with the installing of this plant. The buildings which were being constructed, and which I mentioned in last report, have been completed, and the old buildings have nearly all been taken down. The new buildings are; wash-house 51 by 39 feet, of terra cotta blocks, 18 by 9 inches. A wash-room, 19½ by 11 feet, for the officials. A room 19½ by 11 feet will be used for a temporary hospital. An electric substation 57 by 27 feet, of terra cotta blocks. A lamp-house 39 by 13 feet. Two new engine-houses 40 feet 8 inches by 41 feet, of brick, concrete foundation 7 feet deep. One of these engine-houses is at the McGregor seam, and the other at the third-seam slope. These buildings have wooden roofs, covered with rubberoid. Compressor house 63 feet by 43 feet, of wood, concrete foundation 7 feet deep; rescue station, 57 feet by 25 feet, equipped with ten sets of rescue apparatus. Wooden extension 30 by 15 feet, concrete foundation, is being added to the office. This colliery is now equipped with all modern appliances used in mining, and has one of the most up-to-date bankheads in the province, and larger outputs are looked for in the near future.

The coal is reached by slopes, one on the Third seam, and one on the McGregor seam. Six seams are now being worked, four in the Third slope, and two in the McGregor slope. In the Third slope, the Ford is the top seam. There are 25 feet of coal, 4 feet of shale, and 10 feet of coal. The next is the Four-feet seam, it overlies the Cage seam, from 6 to 8 feet. This seam is generally worked longwall. The Cage-pit seam is 15 feet thick, having about 12 feet of good coal. The third seam is 11 feet thick, from 8 to 9 feet of it is fit for the market. The McGregor seam is 9 to 10 feet thick, all but about one foot of this is workable. A test is being made in the Flemming seam, which is about five feet thick, and which overlies the McGregor seam. It has a rough top and bottom which makes it somewhat expensive to work. The Ford seam, Cage seam, and Four-feet seam are connected by horizontal tunnels. All the coal being delivered in the Third seam, from which it is hoisted to the surface in the Third-seam slope. This slope is 11 by 6½ feet high, and is driven to the basin 5000 feet. No. 5 level is 2800 feet long, all the coal is hoisted from this level. The slope has a pitch of 23 degrees and is in good condition. All these seams except the Four-feet seam are worked bord-and-pillar. The bords, 12 feet wide, with pillars 50 feet.

Not much development work was done in the Ford during the past year. No. 5 level was driven about 200 feet north-west, where it was stopped, owing to bad coal. The top part of the seam is being proved above the stone parting. A balance has been driven off this level, and two bords in one head driving north-west. In the sinking, from No. 5 to No. 6 level, off the tunnel, from the Third seam to the Cage seam, and to the Ford seam, two bords are working on the west side, and four have been driven 450 feet. A balance is being driven off these bords in the ten-feet part of the seam. On the south-east of the sinking, four bords and one level are being driven. One level is being driven around the basin, and on the opposite side of the basin, one balance and back-head, and two slants are being driven by machinery. In the meantime, all the coal from this section is hauled up the sinking to No. 5 level until a self-acting incline, which is being driven, is finished. When this is completed, all coal will be taken out by way of No. 6 level, and the sinking will be then used as a balance. A level was driven south-east, off the tunnel about 60 feet, in No. 5 level, and a bore-hole was put in, to tap the water in the old Dalhousie workings. After boring 300 feet no water was found, as the borehole was in the bottom part of the seam. Another bore-hole was put in at a different angle. A heavy flow of water was struck in this hole about 130 feet. This flow was caused by a break in the coal. It runs with force, the full size of a three inch pipe. A third hole was bored at a little different angle, for 250 feet, but found no opening. The flow from the second bore-hole, and the mine-drainage taxes the capacity of the holes that carry the water to the McGregor pump. Another bore-hole is being bored to assist in carrying the water to the McGregor Seam.

The Four-feet seam is to be worked longwall, and preparations are being made to start to work it in conjunction with the Cagepit-seam pillars. It will be kept slightly in advance of the pillar work in the Cagepit seam. A level is being driven north-west, in this seam off the No. 5 level, for a return air-way from No. 6 to No. 5 level. It is in, 500 feet.

Little development work has been done in the Cage-pit seam, except getting ready to draw pillars. In the latter part of March last an odour of coal smoke was detected coming from No. 3 bord, No. 4 balance, in the iron-door level, north-west side. The pillars were put on double shift, and some of them on three shifts, so as to get a fall in this section to enclose the smoke. A fall was got in No. 2, 3 and 4 pillars, but not of sufficient height, to kill the smell of smoke. The morning of the first of May, the odour of smoke was stronger, and a little smoke began to come out about noon. Temporary stoppings were at once put in, later, permanent stoppings were put in, which have sealed off about 50,000 tons of pillars. This lessened the output from this section, until the work could be again started in No. 3 balance, where six pillars and a level pillar are being drawn. Two bords are being driven south east toward No. 2 balance, for air. No. 2 balance is being put in order for work, and will be ready about November. All the south-east side has been finished and a permanent return air-way made.

In the north-west side of the Third seam, No. 1 balance and back-head are being driven towards No. 4 level. They are up 500 feet and are still going, one bord is being driven north-west toward No. 3 balance. No. 2 balance and back head are being driven to No. 4 level and five bords are being worked on this balance, four driving north-west, and one driving south-east. No. 3 balance is being cleaned, re-timbered, and track relaid. Two bords are being worked on this balance by machines, driving north-west. All work inside of this is shut off by stoppings. This is the territory mentioned in my last report as stopped owing to a crush in the airway. A new airway has been driven to regain this lost ground. It was found that damp was coming from the Cage-pit seam through a tunnel. This was built off. There are two balances of pillars in this section, and I am of opinion that it would be unsafe to draw these pillars, owing to the strata between this seam and the Cage-pit seam, thinning to 50 or 60 feet. On the south-east side the distance between the two seams is 180 feet. Directly above those pillars, there have been four fires built off in the Cage-pit seam. These are the reasons why I think it not safe to draw these pillars. During Mr. Henry S. Poole's management, it was the drawing of pillars under similar conditions, on the same side of the mine, that caused the latest explosion in this colliery.

On No. 1½ balance, four pillars are being drawn, in the south-seat side of the Third seam. This balance is nearly finished. No. 1 balance and back-head have been driven, and three bords are being worked, south-east. The airway-balance and back-head are being driven: these form the permanent return airway for this side of the Third seam. The tunnel in No. 6 level is being prepared for a start. The balance and backhead are being driven to No. 6 level, on the south-east side of the Third seam. The travelling-ways, lately repaired, are in good condition.

Direct haulage is used on the Main slope, and horse-haulage on the levels. The rise workings are operated by counter-balance, the haulage roads are all in good condition.

There are 61,252 cubic feet of air a minute in circulation, the fan making 125 revolutions a minute, with a 3.3 w. g. The ventilation is good. The air is carried down to the lowest level and split in two sections, one for the south east, and one for the north-west. It is distributed by regulators, and enters the man return in the Third seam. The fan is 19 by 5 feet, fan-drift 17 by 13 feet, 26 feet long, fan-shaft 8 by 12 feet, fan-house 41 by 19 feet. A new Capell fan is being erected at the Third seam, and one of the same size at the McGregor seam. These fans are 12 feet 6 inches, to be driven by electricity, and be in operation this month.

The water of this colliery is all pumped from the McGregor seam which is the lowest seam in the field. Bore-holes take the water to the McGregor seam. The water discharged is about 75,000 gallons a day. Since the water in the Dalhousie workings was stopped, the extra accumulation is pumped by two centrifugal pumps, with a capacity of 550 gallons a minute, head 1480 feet. These pumps were placed about the end of April last, and give good service. The water-line is 10 inches in diameter. The air-line is 4 inches. This can be converted into a water-line in case of fire. No sprinkling is done in the mine. The general conditions at this colliery, underground and on the surface, are satisfactory. This colliery, should in the near future be giving a largely increased output. The product for the year was 202,624 tons. There were used 30,904 ℔ of Monobel powder, and 50,190 detonators.

Employees:—

Miners	182
Loaders	19
Shiftmen	146
Boys	12
	359

Surface:—

Skilled labour	59
Labourers	134
Boys	14
	107

Officers:—

John Higson, superintendent.

Wm. Arthrell, manager.

D. Gillis, underground manager.

S. Sutherland, overman.

Samuel Moss, underground manager.

McGregor Seam:—

James McDonald, overman.

John Dunbar, overman.

Lewis Campbell, surface foreman.

J. Conway, mechanical foreman

1911.

	Thermometer	Barometer
October	58°	29.26
November	54°	29.72
December	61°	29.50

1912.

	Thermometer	Barometer
January	60°	28.50
February	60°	29.34
March	58°	29.90
April	58°	29.62
May	58°	29.40
June	59°	29.36
July	58°	29.40
August	60°	29.40
September	62°	29.40

These readings were taken in return airway.

There are 320 Wolf safety-lamps in use.

Rails in Mine.

57,823 feet 18 ℔, 19,570 feet of 12 ℔, 14,780 feet of 30 ℔.

McGregor Seam.

This slope has worked constantly during the past year. It produces about 200 tons a day, and is expected to reach 500 tons a day in the near future. It is equipped with electric haulage, and has been provided with a modern bankhead which is connected to the Third seam bankhead by a steel trestle 320 feet long, equipped with a Jeffrey haulage, which takes the full boxes to the Third-seam bank, where the coal is screened. The coal in the slope is hauled by an electric winding-engine, having a speed of 600 feet a minute, each trip contains eight boxes. The management intend to have double tracks laid at an early date. This slope is 5000 feet long. The distance from No. 5 level to the surface is 2,570 feet. The electric cable to the pump, put in this year, lies along the south-east side of the slope below the level of the track, enclosed in a wooden trough. The timbers along the side of the slope project over the side of the trough, for protection to the cable. A new lodgment, concreted on sides and top, and reinforced with steel, has been connected to the old lodgment. The new pumps are giving good results.

The present workings are confined to the north-west side of the slope, the levels are being worked in No. 4 and No. 5 lifts. In No. 4 level, No. 3 balance is being operated. Nine pillars and the level pillars are working. No. 2 balance is being re-timbered, and tracks relaid for a start at an early date. In No. 5 level on the same side of the mine, two balances are being operated, and in No. 3 balance, seven pillars and the level pillar are being drawn. Two drifts have been put into the Flemming seam, off this level, one of which is in No. 1 bord. This seam is above the McGregor, and is separated from it by eight feet of shale and coal. These drifts are for testing the seam. It is the intention to work it by longwall system. The coal is about five feet thick. No. 2 balance is being driven, and is now up 325 feet. There are five bords driving north-west, and one south-east for airway. No. 6 level on the south-east side is being re-opened. This is the section of pillar work which took fire four years ago, and was flooded. An entrance has been made through the dam,which was put in at the flooding. This dam is 12 feet thick, of reinforced concrete. Some heavy falls are being met. The place is being retimbered and as soon as it is ready, pillar work will be started. The ventilation was very good during half the year. There were 87,000 cubic feet of air a minute passing, after the steam was taken off the pump, the quantity of air was reduced to 59,000 cubic feet a minute, showing that 28,000 cubic feet a minute was due to the length of the heated column. The fan is still running at the same speed, and the same w. g. is indicated.

Surface machinery:—

All the machinery around this mine is run by electricity, except the fans. The new fans now being erected will be run by electricity, also. Three Sterling boilers, 200 h. p. each, two electric hoisting engines at Third seam and McGregor seam, two Walker compressors, giving 1600 cubic feet of air a minute. Motors are used on the bankhead for haulage, driving the shaker screens and picking-tables; and in machine shops and carpenter shops. In all, there are 11 motors. One Cameron pump; 8 by 8 by 5 inches, One Cameron fire-pump, 12 by 12 by 15 inches; 500 feet of 3-inch hose; one Babcock fire extinguisher; 3-inch line of pipes to town-water supply; 70,000 gallons of water in reservoir. The fan used in the Third seam is a Walker, 19 by 5 feet, driven by an engine 15 by 26 by 36. The fan at the McGregor is a Black-Hawthorn 10 by 5 feet, driven by an engine 24 by 24 inches directly connected. The hoisting rope at McGregor seam 1¼ inches, Third seam, 1½ inches.

Underground machinery:—

THIRD SEAM.

One engine, 12 by 12 inches, 6 feet drum, one engine 8¼ by 16 inches 6 feet drum, top of Ford-Pit sinking, one engine 6 by 8 inches, 2 feet drum, No. 4 level, south-east side.

Pumps in Third Seam.

One duplex Northey, 4½ by 2½ inches, 800 gallons an hour, in the sinking. One Jeansville, 6 by 4 by 12 inches, 3000 gallons an hour, in Cage Pit sinking. These pumps are air-driven. The haulage ropes in the sinkings are ¾ inch, balance ropes ½ inch. Two motor-driven pumps, 550 gallons an hour in the McGregor seam.

There were 86,961¼ tons raised during the year, and 11,736¼ ℔ Monobel used with 86,951 detonators.

There are in the mine, 72,780 feet 32 ℔ rails, 60,385 feet of 18 ℔ and 24,570 feet of 12 ℔ rails.

Timber used underground at Albion Mines Colliery.
Year ended September 30th, 1912

Class of Timber	Length feet	Diameter small end inches	No. of pieces	Total Lineal feet
Pit props		5″small end 6″but end		407454
Booms	12 15	6 6½		373229
Sleepers		Width of face and thickness		
	3½	3″x4″		35003

The Allan Shafts.

Owned and operated by the Acadia Coal Co., Limited.

The bankhead at No. 2 shaft is of wood. This building is temporary and will soon be taken down. The coal is conveyed from this shaft to No. 1 bankhead by creeper-haulage, where it is screened. It is hoisted to the second floor of the bankhead by a hydraulic hoist. The full load runs from the hoist to the tipple by gravity. The empties coming off the tipple are elevated by creeper-haul, and run back by gravity to the hoist from which they are taken back to No. 2 shaft. No. 1 bankhead is steel, it has three decks. All the coal and other material is landed on the second deck. The full boxes run from the cage by gravity. The empty boxes leaving the tipple, are elevated by a creeper-haul, from which they run by gravity to the opposite side of the shaft, where they are held by an under-clutch. When liberated they run by gravity into the cage. The screening plant consists of two tipples, with 15 feet screens which deliver the coal to the picking belt, 50 by 4 feet 6 inches. The nut coal and culm are carried by conveyor from the tipples to the opposite end of the bank, where it is delivered into the shaker screen. The nut coal goes to the shaker-tables and into the car, and the culm into a separate car. There are six lines of track, and two more to be laid. The power-house which was being built last year is completed and the power plant installed. The building is of brick, 67 by 55 by 47 feet high, with concrete foundation, 7 feet deep by 3 feet thick. The new boiler-house, 125 by 78 by 45 feet high has been completed. This building has a conveyor along the roof carrying coal to the boilers. An engine-house of brick, 47 by 49 by 30 feet high, with foundation 7 feet deep, is being built at No. 1 shaft. Two work-shops of terra cotta tiles, 9 by 18 inches; one building is used as a machine and blacksmith's shop, and the other as a carpenter's shop.

Much work has been done around the surface, cleaning, leveling, putting in sidings, and timber yards.

The seams are the Ford and the Cage pit. The Ford averages 37 feet: on the north side of the basin, it is 45 feet in places. The Cage seam averages 15 feet, not much work has been done in this seam during the year. The coal is taken out by two shafts, No. 1 and No. 2, each 32 by 11 feet inside of timber. There are three compartments in each shaft, two for hoisting, and one for ventilation. No. 2 shaft, to the Cage pit seam, is 962 feet, and No. 1 shaft, to the same seam, is 1440 feet. The true dip is north 63 degrees, 30 minutes west. The pitch varies from 27 to 50 degrees on the north side of the basin. Some changes have occurred in the management during the year. Mr. H. E. Coll, superintendent, resigned early in the year. Mr. Notebearte was appointed in his stead. Mr. Malcolm Blue, formerly manager with the Intercolonial Coal Company, was appointed manager, August lst, Mr. Lott having been transferred to the Acadia mine, Mr. James Brown, who was manager at the Allan Shafts, was transferred to Acadia mine as manager in August. Mr. Lott having resigned. Mr. Blenkinsop superintendent at the Acadia, also resigned in August last.

The output this year is less than that of last year, due to one of the best producing sections being closed off, owing to indications of fire early in February.

I visited the place on the 8th day of February, but I failed to find any fire, or any indications of fire. The temperature was 53 degrees, which was normal. There was a strange odour in the return air from the section, but no smell of coal smoke. The cry of fire was still being circulated, and I again visited the place on the 13th day of February and found conditions the same as on my former visit. I went again on the 19th day of February. In the meantime the management had walled off the section by three cement stoppings, four feet thick without advising me. I had an interview with the general manager and chief engineer. They claimed that the men refused to work in the section, and that the temperature had risen to 66 degrees. They thought it better to wall off the place, and take no risks. I insisted on getting into the section, as I was sure no fire existed there at a temperature of 66 degrees. They thought it better since it was walled off, to let it remain so for a period of three months. During these three months I took the temperature, which averaged 53 degrees. Only once it registered 54 degrees. A three-inch pipe was inserted in the stopping in return air-way. I had the cover on the pipe removed on several occasions, each time it emitted fire damp. When the three months was about up, I notified the manager by letter that I wanted an opening made in the intake and in the return stoppings. The chief engineer did not think it safe to do so, but gave a guarantee that all coal inside of the stoppings would be taken out. On the 23d day of May, I suggested to the manager to have a test made by leading a line of pipe into the intake stopping and coupling it to the pipe already through the stopping, open the closed end in the return air-way stopping, and turn the full power of the two air-compressors into it. The compressors were turned on with a pressure of 43 ℔ and kept on for 21½ hours. A very large quantity of fire damp came out of the return air-way, but no odour of any other kind. This test was conclusive. There was no fire in the section. About the 18th of July the general manager, the superintendent and I went into the mine. After examining what was coming out of the pipe in the return air-way, we considered that there was no fire in the section, and that an opening might be made: the general manager said he would consider the matter for a day or two. On the 28th of July, an opening was made, four by four feet, in the intake and return, and doors put in. In the meantime, Mr. Blue was appointed manager. After allowing the place to get properly aired, Mr. Blue and the other officials went into the section far enough to convince themselves that no fire existed in the section. All gas was cleared out to the rise, and work resumed. This section is in the north-west side of the Ford pit seam in No. 33 chute. There are now nine places being operated. New timber stoppings have been put in to replace the bord and brattice cloth, later, brick and mortar stoppings will be built. The closing of this section delayed the plans for tapping the water in the Ford pit, as it was here the boring was to be done. A tunnel was driven in through a fault about 100 feet, where the Ford-pit seam was struck, and a level driven, until the thickness of the seam was proved. A bore-hole was put in 230 feet, but failed to find the Ford workings, as the hole went into the rock. A second hole was put in at a different angle for a like distance with the same result. After the opening was made into the closed section, a bore-hole was put in where it was first intended, but struck no water. A second one was put in with a like result. The drill was then moved 150 feet to the south-east and a hole put in. Water was struck at 267 feet, with a pressure of 60 ℔ to the square inch. It was shut off in the meantime until another hole is put alongside. By the time the second hole is completed a line of four inch pipe will have been completed to both holes. These will carry the water direct from the bore-hole to the

No. 1 shaft, at 962-feet bottom, and from there pumped to the surface. The mine is worked bord-and-pillar, bords 12 to 14 feet, from 8 to 9 feet high, with 50 feet pillars. Booms and props are used. The coal is handled in chutes and counter-balances, where the pitch will allow. There has not been much development work. A large amount of rock tunnelling has been done for ventilating, and avoiding long uphill haulage, and to regain coal displaced by faults.

No. 1 tunnel 6 by 7 feet, 370 feet long, was driven off the tunnel in No. 2 shaft, 500 feet from the surface. This tunnel was driven to No. 1 shaft for ventilation. The rock-tunnel at the 500 feet bottom, was driven level, across the measures to take all the coal from the rise about No. 51 chute, on the south-east side of the mine, and from the top of No. 33 chute on the north-west side. The haulage way from No. 51 chute is now in operation, and the haulage-way to No. 33 chute will be completed, and by the month of November a connection will be made. The length of this rock-tunnel, to where the coal was struck toward No. 33 chute, is 1375 feet, width 8 feet, height 7 feet. The tunnel is being driven in rock in the Cage-pit seam, level, in the 962 feet bottom, on the north-west side for the purpose of proving the underlying seam. It is going nearly due north. The Third seam was struck at 250 feet, pitching at a very high angle. This tunnel is 800 feet long, and is still driving. Another tunnel is being driven level, across the measures on the south-east side of the Ford-pit seam, from No. 2, 962 bottom, to connect to the top of a balance which has been driven in the 1200 feet level in No. 1 shaft on the south-east side. This balance is driven up the south side of the basin toward the old Ford pit. It is up 460 feet, and according to the plan will leave a barrier of 340 feet of coal between the top of the balance and the Ford-pit workings. This tunnel, when completed, will be about 800 feet long, and connect to the top of the balance, and cross the basin. The tunnel is for ventilation. These tunnels are all ventilated by a 20 inch pipe. In No. 1 shaft, two tunnels are being driven in rock, one in the east level was 270 feet long, in the rock, and 300 feet in coal, when a fault was met. Rock tunneling was resumed. The tunnel is now 100 feet in rock. The measures here stand at a high angle. The other tunnel is on the north-west side of the shaft, driven in rock 270 feet, due north, where the Cage pit seam was struck. This tunnel was driven in coal for a distance of 90 feet, when another fault was met, which cut the coal out. Tunneling has again been resumed, now prospecting for the Cage-pit seam. The measures around the basin are very much disturbed and broken by faults.

In No. 1 shaft, No. 1 balance on the south-east side has been driven, and stopped at 460 feet. It is on the south side of the basin towards the Ford-pit workings. A barrier of 340 feet is left between the top of the balance and the old workings. Two bords are operated on this balance, going south-east. The south-east level and counter-level have been driven during the year 420 feet, and is still going. The east level has been driven 750 feet through coal and rock, and is still going. On the north-west side of shaft No. 2 a balance and backhead are being driven, now up 100 feet. A slant is driving west, and has four bords working. No. 51 chute in No. 2 shaft, south-east side, has been finished as far up as No. 14 bord. Eight bords are working above No. 14 bord, and have been transferred from the 962 feet level to the 500 feet level. An air-way has been driven from the 962 feet level up to the 500 feet level in the Ford seam. In the north-west side of the Ford seam in the section that was walled off, three places are being worked. On No. 1 balance, on the north-west side of balance six places are being operated, three driving north-west, and three south-east. An air-way and backhead are being driven from the 962 feet level, in the Cage-pit seam to the 500 level, on the north-west side. On the south-east side of the 500, a level and cross-cut are being driven. A sinking is driving by means of a small engine, from the 500 level to the 962 level. The travelling-ways are in good condition. The balances are worked by the counter-balance system. Horse haulage is used on the level. There are 48,000 cubic feet of air a minute in circulation, produced by a Guibal fan, distributed from No. 1 shaft, which is the downcast. Three splits, one at the bottom of the 500 feet tunnel, and two at the 1200 feet bottom. The air after traversing the mine, returns to the return at No. 2 shaft. No. 2 shaft is made dumb by means of doors at the mouth of the shaft. These doors are hoisted and lowered by the cages. The fan-drift is 45 feet long, area 60 feet. The fan-shaft is 10 by 6 feet.

There are 257 Wolf safety-lamps in use. The water is taken out by two turbine electric pumps placed at the 962-feet bottom, in No. 1 shaft. The water in the 1200 is pumped to the 962 lodgement. The daily discharge is 22,000 gallons. The main-air-pipe line is four inches, branch lines 2, 3 and 1 inch. A 10-inch water line has been put in No. 1 shaft. This mine is fairly damp, and needs no sprinkling.

Employees:—

No.	1	shaft	north-west section		22	miners		
“	1	“	south-east	“	24	“	10	loaders
“	2	“	north-west	“	24	“	6	“
“	2	“	south-east	‘	32	“	4	“

Officers:—

Malcolm Blue, manager.

N. McLean, underground manager.

T. Sculley. overman.

Edw. O'Reilly, overman.

D. Reynolds, mechanical foreman.

R. R. Campbell, bank foreman.

Barometric pressure and temperature.

	Barometer	Thermometer
October	29.45 inches	53 degrees
November	28.98 "	54 "
December	29.83 "	42 "
January	29.73 "	47 "
February	29.43 "	43 "
March	29.81 "	46 "
April	29.18 "	46 "
May	29.43 "	48 "
June	29.18 "	52 "
July	29.42 "	52 "
August	29.18 "	55 "
September	29.61 "	56 "

The temperature taken in the main return near the bottom of the fan-shaft.

Surface machinery:—

Two hoisting engines, 20 by 30 inches, drum 7 feet 6 inches by five feet, No. 1 shaft, and No. 2 shaft.

One vertical engine, 8 by 10 inches, No. 1 bank.

One hydraulic hoist, No. 1 shaft.

One Walker engine, 20 by 20 inches; screens and picking-belts.

One fan 26 by 8 feet, w. g. 3.8 inches.

One fan-engine, 13 by 24 inches.

One Niles radial drill, 4 feet, blacksmith's shop.

One lathe.

One bolt and nut threading machine.

Six Babcock-Wilcox boilers, 450 h. p. fitted with super heaters and chain grate stokers.

Two feed pumps.

The Stirling boilers which have been in use, have been taken out. The plant at this mine supplies all the electrical power for operating the Albion Mines. Two electric motors have been placed, one in the blacksmith's shop, one in the Carpenter's shop. The fire apparatus is the same as last year. A new plant for fire protection is under consideration. It will be installed in the near future.

Underground machinery.

One engine, 8 by 8 by 12 inches, drum, two feet, south-west level used in sinking the Cage seam.

One pump 12 by 7 by 4 inches, capacity200 gallons a minute, at the 1200 feet level, No. 1 shaft.

Two large electric, five stage-pumps, 3000 volts, capacity 550 gallons a minute, each, against a head of 1040 feet, at 962 feet level, No. 1 shaft.

The output for last year was 80,640 tons.

There were 29,323 ℔ Monobel powder, 1844 ℔ Samsonite, and 4,158 detonators used during the year.

Rails in mine, 102,760 feet 12 ℔, 19,613 feet of 18 ℔.

I visited this colliery 43 times during the year.

Timber used underground at Allan Shafts,
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	8	5″ and 6″	11141	89128
Booms	10	6″	10344	103440
	12	7″	2530	30360
	15	7″	213	3195
	16	7″	89	1424
	17	7″	99	1694
	18	7″	45	810
	20	7″	320	6400
		Total....	13640 11-17	147323
Sleepers		Width of face and thickness		
	3½	4″	2276	8963
	10	4″	98	988
		Total....	236	9951

ACADIA MINE.

Westville, N. S.

Owned and operated by the Acadia Coal Company, Limited.

There has not been much improvement at this mine during the past year. A trestle 200 by 20 by 12 feet high, has been built from the east end of the bank-house across railway sidings, to the refuse-dump. It has a double track, and a railing on each side. The dumping was formerly done by horse and cart. The screening plant has one large picking-table 40 by 4½ feet, shaker screens and knocking screens. The culm is conveyed to bins in the boiler house. This plant is steam-driven.

The bankhead, wooden frame, is covered with corrugated iron, boiler-house the same. Engine-house, 40 by 42 feet, of brick, lamp-house and officers house of brick, fan-house and compressor-house, brick with concrete foundation. The office, store-house, blacksmith shop, machine shops, and carpenter's shop are of wood with iron roofing. The slope in the Acadia seam is 5000 feet long, nearly on the true dip. The coal is 16 feet, and pitches 26 degrees; true dip 49 degrees, 49 minutes east.

The slope is 10 feet wide and 6½ feet high. Some development has been done the last year in No. 5 and No. 6 level in the bottom part of the seam, below the old pillar work, which has been crushed for the last 30 years. Levels have been driven on the north side of the slope. In both these levels a backover tunnel, has been driven under the main slope and the travelling slope to the south side, where levels will be driven in both lifts. Air-ways have been opened on the north side, and connected to the old overcast at No. 3 level. The same will be done on the south side, as soon as it is far enough in. Balances are being driven in each lift: the coal is of good quality, and in a short time this will be a good producing section.

The sinking was started on the north side of No. 12 level, about 180 feet from the main slope, and was stopped at 200 feet. Two places have been turned off, going north, and two going south. I objected to these being driven. The manager told me he had instructions from headquarters to do so. I still objected to this being done, as it was taking away the support from the main bottom, and slope, rendering them unsafe, for work on the south side of the lift. I asked the management to give me a copy of the proposed plan of operations and requested him not to proceed with this work until I got the plan. Later, I had an interview with the general manager, and the chief engineer about the proposed method of work. I suggested to them what I had suggested to the management, and marked, on the plan, the work that I thought was needed to save the coal that I feared would be lost if the company's plans were carried out. I am pleased to say the matter has been happily settled by the company agreeing to take all the coal out of this section by shafts to be sunk to the dip some time soon. There is no doubt from present indications that the Acadia seam continues under the workings of the Albion mine and Stellarton, as the Drummond slope and workings have now reached nearly 1200 feet beyond the point where the McCullough fault was supposed to be, and the coal still continues as regular as it was 100 feet from the surface in the Drummond slope. The same thing applies to the Acadia, as the face of these deeps is nearly 900 feet below the point where the McCullough fault was supposed to be.

The coal at the face of the deep is good, with a regular dip. Faults were met with in the Acadia slope, near where the McCullough fault was indicated, but none of them proved to be impassible. This mine is in three sections; south side of No. 11, No. 12 and No. 13 lifts, the North side of No. 13 and No. 5 and No. 6 lifts. The lower lifts are worked longwall. In the top part of the seam about 8 feet of coal is taken in the walls which are 37 feet from lowside to lowside. The roadways are six feet wide. Wooden chocks, five by five feet, along each side of the roadway, and booms across from chock to chock. The cuts in the wall are supported by props. Coal is handled by jigs wich are driven, on the full pitch, from lift to lift, and about 400 feet apart. The walls are driven level off the jigs, each way. This gives each wall a length of about 400 feet.

No. 11 level, south, is nearly completed out to No. 1½ jig, one wall is now operated. No. 1 jig, two walls are working, one south, and one north. The main return airway was driven from No. 11 to No. 10 levels, When it is finished, it will help the ventilation. In No. 12 level, south, the coal has been taken out from No. 9 jig, up to the fault between No. 11 and No. 12 levels, out to No. 4½ jig, which has four walls working. There are four walls working on No. 4 jig. The coal has been taken out above the fault, up to No. 11 level, about 200 feet north and south. No. 2 and No. 3 jigs are being widened over the fault, and graded so as to take all the coal above the fault out up to No. 11 level. No. 2 jig has been opened up to No. 11, and forms a return airway from No. 12 and No. 13 levels. This has improved the ventilation in this section, as No. 4 jig was almost closed by crushing. There are five walls being worked in No. 13 lift, on the south side of the sinking. Three others have been driven for a distance of 300 feet, and stopped, as the roadways could not be kept open for a greater distance. Two levels were driven 530 feet off the bottom of this sinking, north towards the main slope, and stopped, due to lack of air. These levels will be started again some time soon.

A sinking was started on the north side of No. 12 level, about 180 feet north of the main-slope bottom. This was stopped at 200 feet, owing to a downthrow fault, about three feet. Two places were turned off on the north side, the coal on this side is excellent.

In No. 5 and No. 6 levels, work has been started in the bottom of the seam beneath the old crush. In No. 5, two levels are being driven north, double shifted, one balance is driving, and a chute for airway. A back-over tunnel has been driven south under the main slope and travelling-slope; when a little further advanced, a counter-level will be driven to open the south side. The same thing is being done in No. 6 level. It is expected in a short time these levels will be giving a good output. The coal is six feet high, and of good quality.

Employees:—

South section, No. 11, No. 12, No. 13	53	miners
North “	6	“
No. 5 and No. 6 levels	24	“

The travelling-slope has been repaired to No. 11 lift, and a track laid all the way. Trips are now run several times a day. The road is in good condition.

Direct haulage is used on the main slope: ten boxes to a trip. The jigs are self-acting, and horse-haulage is used on the level. The roads are in fairly good condition. There are 25,800 cubic feet of air a minute in circulation, produced by a Capell fan, 13 feet 6 inches by 4 feet. Water gauge 5 inches.

The fan is rope-driven, engine 100 h. p. The fan-drift is 30 feet long, 13 feet diameter; fan-shaft 13 feet diameter, 64 feet deep, fan-house is of brick. The air is split at the bottom of the downcast, and is distributed north and south by regulators. It enters the return at the top of the rise workings. A small split from the main downcast ventilates the workings in No. 5 and No. 6 levels. The Wolf safety-lamp, self-lighter, is used. About 300,000 gallons of water a day is pumped from the mine. The mine is now damp, except at the working faces. The dust on the levels is principally stone-dust.

Officers:—

James Brown, manager.

James Burton, underground manager.

A. Black, overman.

D. Henderson, overman.

P. Kennedy, examiner.

J. Ross, surface foreman.

K. Sutherland, mechanical foreman.

	Mine	Barometer Surface		Thermometer	
1911.					
October	32.	30.10	inches	69	degrees
November	31.90	29.81	"	64	"
December	31.70	29.71	"	64	"
1912.					
January	32.	30.	"	60	"
February	32.20	30.12	"	58	"
March	32.30	30.15	"	64	"
April	31.70	29.60	"	66	"
May	31.90	29.90	"	66	"
June	31.90	29.90	"	70	"
July	32.10	30.10	"	73	"
August	32.	29.98	"	74	"
September	31.70	29.05	"	72	"

The temperatures taken in return airway, at No. 10 level, above the workings.

Barometer readings taken at the surface, and at the bottom of the slope.

The water for protection against fire is taken from the town system. There are 4,500,000 gallons in reservoir at the colliery.

There are on hand, for fire protection, one Knowles pump, 10 by 12 by 6 inches, and 600 feet of 2½ inch hose.

Surface machinery:—

One engine, 32 by 60 inches, drum 10 feet, at main slope, rope 1⅛ inch.

One engine, 12 by 12 inches, drum 4 feet, at travelling slope, rope ¾ inch.

One engine 8 by 8 inches, machine shop.

One engine, 12 by 24 inches, at screening plant.

One engine, 7 by 11 inches, for timber.

One Capell fan, 13 feet, 6 inches, rope-driven.

Fan engine, 100 h. p.

Two compressors, air-end 20 by 24 inches, steam end, 30 by 36 inches.

One compressor, 16 by 34 inches.

One Northey pump, 6 by 6 by 3 inches, capacity 900 gallons an hour, in compressor house.

Five B. & W. boilers, 150 h. p. each,

One boiler, 150 h. p.

Underground machinery.

One Jenckes engine, 7 by 10 inches, geared 7 to 1, drum 2 feet at No. 12 south level.

One Jenckes engine, 8 by 12 inches, geared 5 to 1, drum 2 feet at No. 12 north level.

One Cameron pump, 6 by 6 by 3 inches, at No. 13 lift.

One pump, 5 by 12 by 4 inches, at No. 12 level.

One pump, 8 by 14 by 16 by 4 inches, No. 10 level.

One Cameron pump, 6 by 7 by 6 inches, north side No. 6 level.

The water is carried by these pumps in relays into the dams to No. 6 pump, which discharges all the water of the mine to the surface.

No. 6 pump is a Knowles, 14 by 22 by 24 by 5½ inches, steam driven. All the pumps below this are air-driven.

The jig-ropes and sinking ropes are ½ inch in diameter. There are 206 Wolf safety-lamps in use.

The out-put for the year was 84,992 tons. There were 1394 ℔ of Monobel powder and 2522 detonators used.

Rails in mine: 6,220 feet of 32 ℔; 9578 feet of 28 ℔; 3260 feet of 24 ℔; 1500 feet of 22℔; 35300 feet of 18 ℔; 4000 feet 2½ by 5-8 inch iron.

I visited this colliery 22 times during the year.

Timber used underground in Acadia Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	5	5″	159593	797873
	8	5½	13681	109452
		Total....		907325
Booms	10	6″	11338	113383
	12	7″	1159	13908
		Total....		127291
Sleepers		Width of face and thickness		
	3½x4	3″	1858	6500
		Total....		6500

VALE COLLIERY.

Thorburn, Pictou Co., N. S.

Owned and operated by the Acadia Coal Company, Limited.

There have been no changes made in the bankhead or other buildings at this colliery during the last year. The mine has been kept to a state of efficiency for handling the output.

The bankhead is of wood, and is arranged for direct haulage; six boxes are landed each trip; one screen is used, it being supplied with a travelling picking-table 30 feet long by four feet wide, and is driven by steam. There is another screen for loading box-cars, it is also supplied with a picking-table and delivers the coal into the box-cars by a chute. The hoisting-engine house 40 by 42 feet is of brick. The boiler-house is of corrugated iron; the fan-house, stone walls, roofed with wood, and felt. The compressor-house, blacksmith's shop, carpenter's shop, stables, lamp-house and office are all of wood. The output of this mine is less than last year, due to a shortage of railway cars during the months of June, July, and August.

This colliery is on the Greener seam. It is not of uniform thickness, varying in some places as much as three feet; the pitch also varies from 3 to 23 degrees. The true dip is north 28 degrees, 30 minutes west. The mine is operated by a slope 10 feet wide by 6 feet high, and 2400 feet long, dipping from 9 degrees to 23. It is timbered closely with sets. At 400 feet in the west level, an angle deep is driven 2800 feet across the pitch, at an angle of about 3½ degrees. Both slopes are in good condition. The travelling slopes are being repaired, and are safe. Not much development work has been done during the year. One balance is driving off the west No. 4 level, and is up 250 feet. The coal is about 5 feet high. The system of work is longwall. Some bord-and-pillar work is still being done. The water in this sinking in No. 8 and No. 9 has been taken out, and the two-inch pipe has been replaced by a four-inch pipe. There is no difficulty now in handling all the water in this section. No work has been done in No. 9 level, owing to the poor quality of the coal. Prospecting is about to be started to prove the quality of the coal further to the east and to the west. In angle deep west, No. 8 level, No. 6 incline has been driven to No. 7 level, and has six walls working. The level has been driven 200 feet during the year: it is kept a sufficient distance in advance of the walls to allow new inclines to be turned off and driven up one wall-length ahead of the advancing walls, on the outer incline. No work has been done on the east side of this lift. In No. 7 level, west, three inclines are being operated, and two walls are working on No. 5 incline, all nearly finished. In No. 6 incline, nine walls are being worked, an airway is driving up from the top of this incline, to No. 4 level. When these are connected, the ventilation will be improved by reducing the distance of air-travel. No. 7 incline is being driven, and is now up 200 feet, No work is being done in No. 7 level, east. In No. 6 level, east, six pillars are being drawn, and one bord working in No. 2 incline. In No. 4 level, west, No. 7 balance and backhead are being driven to this level, and are up 200 feet. Four bords have been turned off going west, and were driven in 50 feet, where they were opened, and are now being worked longwall, each wall 40 feet. In No. 4 level, north-east, four pillars are working, and preparations are being made to start five more.

Direct haulage is used, six boxes to a trip on the main haulage; on angle deep, 12-box trips are run. Horse haulage is used on the levels, and counter-balances on inclines. There are 36,000 cubic feet of air a minute in circulation, produced by a Walker fan directly connected, running at 85 to 90 revolutions a minute w. g. 3 inches. The air is carried to the bottom of the main slope, one split to the north-east section, and one to the bottom of angle deep: after sweeping the faces it passes into the main return of No. 4 level. The fan-drift is 16 feet long and 8 feet high. Air-shaft, 8 by 8 feet. Ackroyd & Best safety lamps with electric lighters are used. The water is pumped by three pumps, one at No. 8 lift in angle deep, which handles all the water in angle deep, and discharges into the dam at the 1800 feet level. The pump on the east side of the mine discharges into the same dam. The pump at the 1800 feet level discharges the water of the mine at the surface: about 135,000 gallons in 24 hours. The air pipe-line from the surface to the 1800 feet level is five inches. From this point a 3-inch line runs to the angle deep on the west side. This mine has very little gas, and is fairly damp. Conditions are very satisfactory.

Employees:—

North-east section	7 miners
East "	2 loaders
West "	61 miners
West "	15 loaders

Officers:—

Robert H. Gray, manager.

H. H. Cameron, underground manager.

J. H. McNeill, overman.

Neil McKay, overman.

Jas. D. McKay, examiner.

Geo. Fraser, surface foreman.

W. W. Fraser, mechinacal foreman.

	Barometer	Thermometer
1911		
October	30.40 inches	62 degrees
November	30.10 "	54 "
December	29.50 "	54 "
1912.		
January	29.50 "	56 "
February	30.20 "	54 "
March	29.50 "	54 "
April	30.50 "	54 "
May	30.00 "	56 "
June	29.50 "	54 "
July	30.00 "	54 "
August	29.90 "	54 "
September	30.10 "	54 "

All readings taken in return, on No. 4 level to the rise of the workings.

Surface machinery.

Three Stirling boilers, 200 h. p. each.

One return tubular, 50 h. p.

One hoisting engine, 16 by 39, geared 2½ to 1, drum 8 feet.

One engine 8 by 12 inches (single)

One engine 8 by 12 inches (single) at screening plant.

One compressor 17½ by 24 by 20 inches.

One compressor, 17 by 42 by 18½ inches.

One Walker fan, 28 feet, directly connected to Walker engine, 20 by 24 inches, producing 36,000 cubic feet of air at 60 revolutions a minute, w. g. 3 inches.

One duplex Cameron pump, 4 by 8 by 12 inches, at reservoir.

One duplex Cameron feed pump, 4 by 8 by 12 inches.

One Dynamo 125 volts for lighting plant.

350 feet of 2½ inch hose for fire protection.

One Jeansville pump, 8 by 5 by 12 inches.

The reservoir contains a supply of from 2½ to 3 million gallons of water.

Underground machinery.

One Lidgerwood engine, 10 by 12 inches, geared 5¾ to 1, rope ⅝ inch.

One Sturtevant engine 7 by 12 inches, geared 4 to 1, drum 3 feet 3 inches, bottom of No. 1 balance, north side.

One Cameron pump, 4 by 8 by 12 inches, at No. 8 level.

One Cameron pump, 5 by 12 by 12 inches, No. 7 level.

One Northey pump, 5 by 12 by 12 inches, east side 2,400 feet level.

One compound Knowles pump, 12 by 24 by 8 inches, l. p. 20 ℔ h. p. 70 ℔, 16,500 gallons an hour, at 1800 feet level.

The pump discharges all the water in the mine, to the surface. It is steam driven. All other machinery and engines in the mine are air-driven.

The ropes on the main hoistings are 1 inch; on the angle deeps ⅝ inches, and on balances and inclines, ¼ inch.

Timber used underground Vale Colliery, Thorburn,
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of. pieces	Total Lineal feet
Pit props	6	5″	8308	49850
	5	4½″	84390	421960
		Total....	92698	471810
Booms	15	6″	3615	54225
		Total	3615	54225
Sleepers		Width of face and thickness		
	3½	4′	9864	34525
		3′		
		Total	9864	34522

DRUMMOND COLLIERY.

Westville.

Owned and operated by the Intercolonial Coal Company, Ltd.

This colliery has worked steadily during the year. The output is less than it was last year, due to scarcity of loaders and loss of time. There has been no improvement of importance since last report, except the building of an engine-house, 42 by 41 feet, and the placing of a new hoisting engine at No. 2 slope. The bankhead machinery consists of three revolving tipples, with shaker screens, and three picking-tables, 40 by 4 feet. Each table is run by a separate engine. There is a conveying table at right angles to the end of each picking table, which conveys the coal to box-car loader. One tipple is used to handle the coal from No. 4 slope, the other handles the coal from No. 6 and No. 8 lifts, and the third tipple handles the coal from the deep seam in No. 1 slope. All the buildings around this colliery are of wood, except the engine-houses, and the fan and compressor-house. These are of brick. The building and work-shops are heated by steam Considerable repairs were done during the year, putting new timber in the fan-shaft, and strengthening the center buntings.

This colliery is worked in three sections, all in the same seam. Each section having its own slope. The coal from the deep seam is hauled out of No. 1 slope. In No. 6, No. 8 and No. 9 lifts, coal, and clay, and the men in both sections, are hoisted out of No. 2 slope. No. 4 slope is about 450 feet south of No. 2. All the coal from No. 4 slope is hauled overground by horses on a tramway to the screens at the main bankhead. This tramway is housed.

The main slopes are 8000 feet long, on an angle of 17 degrees. The coal is 16 feet thick, these slopes are 10 feet wide inside of timber. No sinking was done during the year. No. 4 slope is 2000 feet long to the main bottom. At this point, a level is in about 1000 feet south where a back slope is driven down 3,200 feet, on an angle of 14 degrees. The coal here is not so good; a number of stone partings occur. The coal is not so thick as in the Main slope. The slopes are timbered by sets, down to No. 12 lift. From there to No. 19 lift, it is timbered with chocks and booms. The Main seam is worked longwall. No. 4 slope, and No. 6 and No. 8 lifts are worked bord-and-pillar. In the Main seam the development is kept well in advance of the general work. No. 19 level south, is now in 1300 feet, having been driven during the year 900 feet. A return airway has been driven down from No. 18 to No. 19 level, 680 feet. No. 1 balance is being driven, and is up 60 feet. The levels on the north side of No. 19 lift have nearly reached the north boundary between the Intercolonial Company's area, and the Acadia Coal Company's Area. From the slope, the face of the level is 875 feet. A return airway has been driven on this side from No. 18 level to No. 19 level, 660 feet. Three jigs are being operated, and one being driven on No. 18 level south. No. 2 jig is being driven double-shifted. No. 3 jig, driven up to No. 17 level, has two walls working, one south, and one north, No. 4 jig, six walls working, three south, three north. No. 5 jig, five walls working, three south, two north. In No. 18 level, north, two jigs and two walls are working, taking the coal out, up to a fault which runs through the center of this lift. No. 2 jig is being cleaned and graded over the fault to connect to a level, which is being driven north above the fault, so as to get the coal above the fault to No. 17 level. When this jig is opened, all the coal above the fault will be brought down this jig to No. 18 level. Two walls are being operated below the fault, on this jig, one south, and one north. On No. 17 level, south, there are three jigs working. No. 3 jig has four walls working, two south, and two north. This jig is all nearly worked out. On No. 2 jig, three walls are working, No. 1 jig three walls are working, two north and one south. No. 17 level, north, three jigs zre working. No. 1 jig is nearly worked out. No. 2 jig has five walls working, three south and two north. No. 3 jig has six walls working, three south, and three north. No. 6 and No. 8 lifts are being worked off No. 2 slope, in the bottom part of the seam, which was left in after the first working.

A start was made four years ago, as an experiment, to see if this coal could be taken from underneath the crushed work. Levels were driven south toward No. 4 slope. These levels have been driven 3,650 feet, and eight balances have been driven from No. 8 to No. 7 levels, 450 feet each. A level has also been driven from the south side of No. 8 level, through under No. 1 and No. 2 slopes to the north side where levels are being driven north, and have reached 960 feet. Balances are being driven up to No. 7 level. No. 1 balance is up 250 feet, and No. 2, 180 feet. These are double-shifted. The average thickness of this part of the seam is six feet, the coal is fairly good. The number of tons now ready for operation in this part of the seam is about 437,500. About 120,000 tons have already been taken out within the last four years. This amount of coal has been recovered from a section considered at one time to be entirely lost. It takes great care in the operating of this section, as a fall means much expense and loss of time. It requires very much timber, also, owing to the broken nature of the section.

The clay seam is operated from No. 9 lift. The clay is hauled by horses through two tunnels, one tunnel from the main seam to the second seam 950 feet, and from the second seam to the third seam 470 feet. The clay is taken from under the third seam.

It is worked bord-and-pillar, rooms 12 feet. One level and balance and four bords are being operated. No. 8 lift, south side, No. 1 balance has four places operating, two bords two pillars, two north and two south. No. 2 balance has six bords working three south, and three north. No. 3 balance has six bords working, three south, and three north. No. 4 balance, six bords, three north, three south. In the other four balances the coal is worked from No. 4 slope. In No. 8 level, north, two levels are being worked, double-shifted and are now in 960 feet. These levels are nearing the boundary line between the Intercolonial Coal Company's area, and the Acadia Coal Company's area. No. 1 balance and backhead are being driven toward No. 7 level, and are up 250 feet. No. 2 balance and backhead are also being driven to No. 7 level, and are up 180 feet. No. 1 balance in No. 6 lift, south side, has been driven, four bords are being operated in the bottom coal, two south, and two north. No. 2 balance and backhead are being driven toward No. 5 level. These are also in the bottom coal, and are up 150 feet.

One pillar-stump is being drawn inside the sinking to No. 7 level. In this sinking six bords are being worked, 12 feet wide and 6 feet high. All the coal in No. 4 slope is taken up the back slope 1000 feet to main slope. From here it is hoisted to the surface, then hauled to the screens at the main bankhead. The slope is 3,200 feet long, and the work is all confined to the north side. Four levels are being operated. The slope was driven 100 feet to No. 12 level. No. 11 level has been driven north during the year 900 feet—length 1300 feet in the bottom coal. No. 1 balance has four bords operating, No. 2 balance and backhead have been driven to No. 10 level and are each up 90 feet. No. 10 levels are still driving in the bottom coal, and are in 1000 feet. Two balances are being driven to No. 9 level. No. 3 balance and backhead are up 250 feet. No. 4 balance and backhead are up 200 feet. These balances are intended to reach No. 9 level. No. 9 levels are still driving, and are in 1200 feet. No. 2 balance and backhead are up 170 feet. No. 3 balance and backhead 140 feet. These will be continued to No. 8 level, 450 feet. No. 8 level is operating four balances. This is four of the eight balances which were driven from No. 8 in No. 2 slope, and connected to No. 4 slope: this makes a shorter haul, and a shorter level to keep in repair. No. 1 balance is up 150 feet, two bords working, No. 2 balance is up the same distance, has four bords working. No. 3 balance is up 400 feet to No. 7 level, four bords working. No. 4 balance has been driven up to No. 7 level and has five bords working, three north and two south. All these workings are in the bottom coal under the old crush. There is enough development work to give 262,500 tons of coal in No. 4 slope. The slope has produced in the last three years more than 80, 000 tons of bottom coal.

The travelling way is in good condition, having been repaired from No. 11 to No. 8 lift. The travelling way in the Main seam from No. 17 to No. 19 is not in good condition, but the management has started to brush and re-timber. This work would have been done earlier but the engines in the mine were employed constantly in the driving of air-ways.

Direct haulage is used on the slopes in the Main seam, 16 boxes to a trip. From No. 8, No. 6, and on No. 4 slope, eight boxes to a trip. This slope has single track. Horse haulage is used on the levels. The jigs are self acting.

There are 47,000 cubic feet of air a minute in circulation in the Main seam, and 27,500 cubic feet a minute in No. 4 slope. The current is produced by a Walker fan, 20 feet 6 inches, rope-driven, w. g. 6½ inches. The air is split at the bottom going north and south, and is distributed by regulators.

Miners.

Main seam, north side	68
Main seam, south side	91
In 6, 7 and 8 lifts, south	70
No. 8 lift, north	16
No. 4 slope, north	72
Clay seam	9
	326
Loaders, shift-men and boys	283
Surface	257
Grand Total	866

There are 667 Marsaut safety-lamps in use.

Output for the year, 240,747 tons of coal, 3,634 tons clay.

Officers.

Jas. Floyd, superintendent.

Thos. Hale, manager.

A. Sutherland, underground manager

T. Gray, underground manager.

D. McNeil, underground manager.

R. Lauchlan, overman.

G. Wright, overman.

J. Henderson, overman.

Norman McLeod, overman.

G. E. Burney, overman.

W. Gray, overman.

E. Hall, overman.

Thos. Stewart, examiner.

James Smith, examiner.

Wm. Wadden, examiner.

Thos. Floyd, surface foreman.

Jas. Saunders, mechanical superintendent.

This mine is somewhat dusty in places—no sprinkling is done.

Barometric pressure and tem

	Barometer		Therometer	
October	29.50	inches	70	degrees
November	29.80	"	69	"
December	29.81	"	68	"
January	29.42	"	66	"
February	29.04	"	64	"
March	29.50	"	64	"
April	29.22	"	64	"
May	29.40	"	64	"
June	29.40	"	68	"
July	29.48	"	70	"
August	29.46	"	72	"
September	29.38	"	71	"

One engine 24 by 42 inches, at No. 2 slope.

One engine 28 by 60 No. 1 slope.

One engine 16 by 24 by 26, No. 4 slope.

One engine 8 by 12 inches, No. 2 screen.

One engine 8 by 12 No. 3 screen.

One engine 8 by 12, conveyors and box cars.

One engine, 10 by 15 inches, bankhead.

One 12 by 24 inches, culm conveyor.

One engine 7 by 10 inches, fan-shaft.

One engine, 8 by 10 inches, machine shop.

One engine, 14 by 24 inches, brick plant.

Two engines, 8 by 12 inches, wash-plant.

One Walker compressor, 2 by 2½ by 39 by 22 by 35 inches, fan shaft.

One Jenckes compressor, 18 by 30 inches, fan-shaft.

One Walker fan, 20 feet 6 inches, rope-driven, w. g. 6.5.

Five water tube boilers, 1000 h. p.

One boiler, 200 h. p.

Five boilers, 900 h. p.

Three boilers, 180 h. p. Scott pit.

Underground machinery.

One engine 7 by 10 inches, travelling slope, No. 18 lift.

One sinking engine, 10 by 12 inches.

One Jenckes engine, 12 by 15 inches, No. 4 slope.
Engines air-driven. Ropes, self-acting inclines, 1-2 inch.

One Cameron pump, 7 by 10 by 3½ inches, No. 19 lift.

One Northey pump, 10 by 12 by 4 inches, No. 18 lift.

One Northey pump, 14 by 12 by 5 inches, No. 17 lift.

One Knowles pump, 14 by 18 by 4 inches, No. 14 lift.

One duplex Northey pump, 11 by 5 by 18 inches, No. 9 lift.

All air driven.

One pump 8 by 14 inches, steam-driven, No. 5 lift.

This pump discharges all the water to the surface, head 325 feet.

One pump, 10 by 18 by 4 inches, No. 6 lift, No. 4 slope. This pump discharges to No. 5 lift.

All the colliery buildings are equipped with patent fire extinguishers.

There are four hydrants connected to the town water supply, 700 feet of 2½-inch hose. Two large reservoirs, which can be connected to feed pumps in a few minutes.

Rails in mine:—

42,316 feet 32 lb; 426,236 feet 18 lb; 9,750 feet 2½ by [illegible] iron.

There were 12,585 lb Monobel powder, and 21,410 detonators used during the year.

I visited this colliery 45 times, last year.

Timber used underground in Drummond Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	5 8	4½′ 5′		2668325
Booms	10 12	6′ 7′		850684
Sleepers........		Width of face and thickness		
	3½x4	3′		22780

THOMAS BLACKWOOD.
DEPUTY INSPECTOR OF MINES.

Report of accidents in mines of Pictou County for the year ending September 30, 1912.

No.	Date	Mine	Name	Age	Remarks	Total
1	1911 Oct. 14	Acadia Mine	Thomas Roy	17	Fatally injured by a runaway Box on the jig, and died from effects of his injuries the same night	1
2	Nov. 21	Allan Shaft No. 1	Wm. Archibald Cameron	23	Instantly killed by being caught by revolving Wheel on main driving shaft of screen engine under Bank house.	1
3	Nov. 24	Drummond Col.	David Paton	63	Slightly injured on body by a runaway Box on incline.	
4	Nov. 24	Drummond Col.	James Sinclair	39	Thumb broken and disjointed, caught between Boxes while coupling up Boxes.	
5	Dec. 19	Vale Colliery	James Frasier		Head badly cut by a fall of stone while eating his luncheon.	
6	Dec. 20	Vale Colliery	John Atkins	15	Arm broken by being caught between boxes while coupling Box.	
7	1912 Jan. 17	Albion Mines Col.	Alfred Bishop	20	Back and chest crushed by falling in front of cage while it was in motion.	
8	Jan. 23	Allan Shaft No. 1	William Muller	34	Killed by a fall of top coal at face of pillar.	1
9	Jan. 25	Albion Mines Col.	Geroge Hopkins	29	Face cut and back bruised, by a fall of coal at face of pillar.	
10	Jan. 26	Vale Colliery	John H. McNeil	28	Overman: head hand and leg cut by a fall of rock.	

11	Mar. 22	Albion Mines Col.	Fred Strattie	21	Cage runner, bone in left foot broken and ankle disjointed; caught by cage leaving the track.	
12	Mar. 26	Drummond Col.	Wm. B. Muirhead	39	Killed by a runaway empty box on the Drummond No. 1 Slope.	1
13	Mar. 26	Drummond Col.	James Spellman	29	Killed instantly by the same box as above.	1
14	Mar. 26	Drummond Col.	James Lauchlan	27	Right leg broken above the ankle by the same box as above.	
15	Mar. 26	Drummond Col.	Norman McLeod	49	Small bone in leg broken, and slightly injured on the body by same box as above.	
16	May 14	Allan Shaft No.2	David Chewings	44	Right leg broken and two ribs broken and shoulder dislocated by a fall of coal at face of pillar.	
17	June 15	Acadia Mine	Henry Taylor	56	Fataly injured by being knocked down by a horse and full trip ran on top of him. Died the same evening from injuries received.	1
18	July 13	Allan Shaft No. 2	Arthur Hayman	25	Killed instantly by falling down shaft from 500 level to 962 level.	1
19	July 24	Drummond Col.	John Davidson	14	Leg broken by a runaway box on lant	
20	July 30	Allan Shaft No. 1	James D. McDonald	24	Fatally injured by a fall of top coal at face of Bord. Died from the effects of his injuries the same night.	1
21	Aug. 7	Albion Mines Col.	Hugh Currie	26	Back and legs bruised by a fall of coal at working face.	
22	Aug. 13	Albion Mines Col.	Thos. Scott	24	Left arm broken by a fall of top coal at face of pillar.	
23	Aug. 28	Albion Mines Col.	Robert Clark	20	Left leg broken at the thigh by being knocked off the cage along with an empty box while cage was in motion.	

ACADIA COAL CO., LIMITED.

The following description of the electric plant, recently installed by the Acadia Coal Company, at Allan Shafts, is kindly furnished by Mr. John Higson, Superintendent, Albion Mines:

The Electric Generating plant of the Acadia Coal Co., is located at Allan Shafts, about 1¼ miles southwest of New Glasgow.

The Allan Shafts and Albion Mines are the only mines in Pictou County where electrical developments have taken place.

The plant consists of two turbine sets, and are described as impulse turbines, with pressure stages: these stages being subdivided into velocity stops as required. They are of 1500 k. w. each, unit, and were constructed by the Allegemeine Electricidte Gesellschaft of Berlin. They are rated to work at a steam pressure of 150 ℔, with a total superheat temperature of 300 C., 3000 revolutions a minute.

Under test, the steam consumption was found to be 14.4 and 14.78 ℔ a kilowatt-hour.

In the basement are placed two condensors; these are of the usual cylindrical surface-condensing type. The air-pumps are placed clear of the condensors, to ensure accessibility.

The air pumps are of the reciprocating type coupled direct to a 17.5 h. p. motor, taking 27 amperes at 525 volts, speed 236 revolutions, and sustain a vacuum of 27 inches under full load. The centrifugal circulating pumps are directly coupled to an induction motor of 75 h. p. taking 77 amperes at 525 volts, and running at a speed of 975 revolutions a minute. These pumps are situated on the bank of the East River and are about 300 yards distant from the condensors. Their capacity is 5000 gallons a minute against a head of 42 feet. Metallic starting resistances are used on these motors, owing to the exposed position of pump-house. The liquid starting type is unsuitable on account of the severity of winter. In connection with the condensor, auto-atmospheric valves are fitted to the exhaust pipes, allowing the exhaust to escape to the atmosphere, in the event of a condensor-failure. The generators have a capacity 1500 k. w. each at cos. p. 8 3150 volts, 344 amperes a phase, frequency, 50. The exciter armatures are mounted on the same shaft and have no separate bearings. The exciter-frame is bolted to a flange on the end bearing pedestal, and fixed in position by an alignment–ring. The cable connections to the switch boards are arranged underneath, and at the exciter end of the generators, heavily insulated and steel armoured cable being employed. The current is led to the collector rings by copper brushes, the exciting voltage varying according to the load

The maximum allowable voltage is 110. These low values are chosen to keep voltage low through the slip rings, moreover, it obviates the danger of racing. The generators are of enclosed type. Fans are provided on the ends of motors for cooling purposes. The air is drawn through a filter. These air-filters consist of a permeable material which is sewn together in the form of pockets which are stretched on a wooden frame-work, the whole being mounted on angle-iron frames. The number of these frames is varied to suit the required quantity of air. This material is cleaned when required by means of a vacuum cleaner. From 1000 to 7000 cubic feet of air a minute is required for cooling purposes: the quantity being determined by the load on the machine.

The main switch boards are in black marble, and consist of fifteen panels. The main distributing leads consist of round copper bars with concentric couplings. The current and potential transformers are placed immediately behind the high tension panels, and are housed in concrete cells. The secondary leads from these transformers being led to their respective instruments in small iron rectangular cases. In front of the cells, previously mentioned, are placed an additional group. These contain the main control-switches, which are oil-immersed. Each of the main switches is supplied with two maximum current releases coils, and are set to automatically cut out the switch when a certain pre-arranged current passes through them. In connection with the tripping gear of these switches, there is an arrangement, when the switch trips, a red lamp is lighted, this light being placed in a prominent position on the switchboard, so as to be seen by the engineer in charge. The main generating control panels are fitted with apparatus, for the control of the exciters, exciting currents, syncronising for parallel running. Provision is made so that in case of one exciter failing, another can be used immediately. Adjacent, and to right of the main controll panels, is fixed a regulating apparatus, which is an ingenious signalling arrangement. When a heavy load is thrown, on or off, the signal is given by colored lamps, and at the same time by the ringing of bells. Two of the panels on the high-tension board are for the control of the primaries of the main-transformers. These transformers are placed in a special room in the basement of the building, and are of the oil-cooled type. They have a capacity of 350 k. v. a., and are supplied with a current of 62.2 amperes at 3150 volts, which is transformed to one of 3.86 amperes at 525 volts. This secondary current is conveyed to the low-tension switch-board which consists of 9 panels. These panels control all the various auxiliary motors for the condensing plant, screens, crusher, carpenter shops, machine shops &c., as well as lighting the plant, and part of the town of stellarton.

The motors used in addition to those already mentioned at present at Allan Shafts, are as follows:—

Machine and Blacksmith shop 25 h. p. 500 volts 750 revolutions a minute.

Carpenters' shop, 25 h. p. 500 volts 750 revolutions a minute.

Two underground pumps, five stage Rateau centrifugals, head 1040 feet, gallons a minute 550 each.

Motors 300 h. p. 3000 revolutions a minute and 3000 volts.

High pressure current is transmitted from Allan Shafts to Albion Mines of 3150 volts, a distance of about 1½ miles. This current is transmitted through cables, three-core specially insulated, lead covered, and armoured with two layers of steel band, their size being three inches diameter, by 120 degrees m.m. These cables are laid in duplicate to ensure an uninterrupted service. The cables are laid in a trench three feet deep, and covered from Allan Shaft to Albion; where they terminate at a sub-station at 3150 volts and are then sub-divided, on the switch board, to the different motors in use at present at Albion Mines, which has been practically electrified within one year. Formerly there were in use at Albion Mines 1518 h. p. steam boilers, now only one boiler 200 h. p. is in use, and within a very short time steam, as a power here will be cut out altogether; as only one fan is now using steam.

Electricity is now being used at Albion Mines in the following capcaities:—

Hoisting engine, Albion Slope, motor 320 h. p. 500 revolutions, 3000 volts. Speed 600 feet a minute.

Hoisting engine, McGregor Slope, motor 320 h. p., 500 revolutions, 3000 volts.

Two electrically rope-driven Walker Air Compressors, running at 120 revolutions a minute and giving 1600 cubic feet of air at 100 ℔ pressure driven by motors 320 h. p. 500 revolutions, 3000 volts, each.

These motors, it will be noted, are all of same capacity, and all are interchangeable, so that one spare motor is all that is carried.

Two underground electric pumps are placed in the McGregor Mine, from which all the water from the Albion and McGregor is pumped. Rateau 7 stage centrifugal-pumps with a capacity of 550 gallons each a minute against a head of 1480 feet directly coupled to 440 h. p. motors, taking 3000 volts at 3000 revolutions a minute. The cables are taken down each side of slope and are protected by being placed in a box-drain of 3-inch plank. There has also been erected at Albion Mines a Capell fan 12 feet 6 inches diameter and 4 feet wide, with a capacity of 100,000 cubic feet a minute, speed 215 revolutions with a 5½ inch w. g. This fan is rope-driven by a motor 150 h. p., 750 revolutions a minute, volts 3000. This fan is in operation now and gives very good results. A duplicate is being placed for the McGregor Seam which we expect to be in operation by January 1st, 1913.

The screening plant is all electrically driven and motors for this work in use are as follows:—

	H.P.	Rev. a m.	Volts
Main picking-belts, screens, and Zimmier conveyors	45	750	500
Box-car loading conveyor and elevating gear	25	"	"
For pickling-belts	25	"	"
Car-haulage (1)	25	"	"
Car-haulage (2)	10	"	"
Creeper	10	"	"
Knocking screen	10	"	"
Three down car-hauls	10	"	"
Full trip hauls	10	"	"
Main tipples	10	"	"
Tipples, house-coal, stone, and refuse, carpenters' shop, and machine shops	45	"	"

There are two transformers in the sub-station, transforming current from 3150 to 525 volts. The lower voltage being for the motors previously mentioned. A separate cable is run from the sub-station to each high tension motor, each having a distributing panel controlled by an automatic relay-switch with time-limit. The low-tension panels have an automatic switch with overload and no-voltage release. There are several space panels fitted to the switch board for future developments. The whole of the plant is of an up-to-date nature, and no expense has been spared to make it efficient

I may say that since the change from steam to electricity has been made, generally it has been satisfactory, especially regarding coal for colliery consumption. Some minor stoppages have been encountered, but only what might be expected from so large a plant of new machinery. No accidents of any kind have been met with from the introduction of this high voltage, which speaks well for the insulation of the machinery. Only in one case have we seen anything that would be considered dangerous from the use of electricity in Mines. One of the cables in the McGregor Mine, when the current was turned on, burst causing a flash of about five minutes duration; but as the cables are on the intake airway, I would consider them perfectly safe, or any cable conducting electricity so long as it is kept in an intake airway.

Yours very truly,

JOHN HIGSON.

Stellarton, N. S., December 14, 1912.

Port Hawkesbury, N. S.
October 22, 1912.

Hiram Donkin, Esq.,
Deputy Commissioner of Public Works and Mines, and Inspector of Mines, Halifax, N. S.

Dear Sir:-

I beg leave to submit to you the annual report on the coal mines in the Inverness district for the year ended September 30th, 1912.

INVERNESS MINE

Situate at Inverness, Inverness County.

Owned and operated by the Inverness Railway & Coal Company.

The buildings are, bankhead of wood, 350 by 18 feet, with an ell 80 by 50 feet over the picking-tables and car chutes: power-house of wood and cement, 70 by 75 feet: boiler-house of wood, 40 by 70 feet: forge and machine shop of wood, 22.5 by 74.5 feet: wash-house of wood, 25 by 60 feet, equipped with sinks, lockers, hot, and cold water: carpenter-shop of wood, 18 by 28 feet: fan-engine-house of brick, 18 by 47 feet: lamp-house of wood, 16 by 34 feet: general office and store-room of wood, 32 by 55 feet; stable of wood, 20 by 60 feet; stable of wood, 26 by 60 feet; stable of wood, 30 by 60 feet; repair-shop of wood, 25 by 60 feet; store-room of wood, 20 by 30 feet: superintendent's residence 36 by 40 feet: manager's residence 32 by 34 feet: twelve single dwelling houses, each, 20 by 26 feet, with kitchens 9 by 10 feet attached; one single dwelling house 26 by 40 feet: eighty-seven double dwelling houses 24 by 40 feet, with kitchens 9 by 10 feet attached: one single dwelling house 24 by 40 feet: four single dwelling houses 18 by 26 feet: one single dwelling house 33 by 38 feet: one single dwelling house 30 by 40 feet: one single dwelling house 22 by 33 feet: one single dwelling house 16 by 24 feet. There has been erected during the year a building to contain the coal briquetting plant the extreme dimensions of which are 87 by 53 feet; the main building being 87 by 29 feet of wood, and the engine and boiler-house 42 by 24 feet of brick; also a building, containing the coal washery, 31.6 by 40 feet, with an ell attached 17 by 25.5 feet.

The seam worked is known as the seven-feet seam, and the coal averages approximately this thickness: the seam dips 15 degrees at the surface, and increases to 35 degrees at the bottom. The direction of dip is north 7 degrees east.

The haulage slope, is 5,650 feet long, and 10 feet wide, is in excellent condition: the slope dips from 15 degrees at the surface to 28 degrees at the bottom.

The mine is worked bord-and-pillar, pillars being drawn while advancing. At the present time a strip of coal about 150 feet thick is being left unworked between the level and No. 3 bord to protect the haulage ways while the level is being advanced to the boundary. The following is a report of the development work done during the year:—

No. 7 west level:—This level has been driven 705 feet during the year, being now 4,300 feet long. No. 2, 3 and 4 chutes have the pillars all drawn to the level pillar, which is about 55 feet thick. No. 5 chute, with the exception of a few hundred tons of coal which is being extracted now, is drawn to the level pillar. No. 6 and 7 chutes off this level, have been driven through to No. 6 west level, the bords have been driven in No. 6 and the top pillars are being drawn including the railroad pillars of No. 6 west level, which were previously lost; it is the intention to pursue the same course in No. 7 chute which will be the last chute off this level, as the levels are getting so close to the No. 6 levels at this point, that the next chute will be driven off No. 8 west level to regain this coal.

No. 7 east level:—This level has been driven 200 feet duriuring the year, being now 4,900 feet long. No. 2 balance is completed, the pillars being drawn to the level-pillar which is about 55 feet thick. In No. 3 balance, the pillars are all drawn except that in No. 1 bord which is left to assist the level-pillar in supporting the haulage way. In No. 4 balance the pillars from No. 5 bord up are all drawn and the pillars from No. 2 to 5 bords are being drawn now. In No. 5 balance the pillars from No. 6 to 10 bords are being drawn and some of the bottom bords from No. 4 up are being driven. In No. 6 balance the pillars from No. 6 to 10 bords are being drawn and one of the No. 5 bords is driving. No. 7 balance was driven up against a fault that was met above No. 9 bord on this balance. The pillars from No. 5 to 9 are being drawn, and the No. 4 bords are driving: No. 8 balance has been driven up for No. 10 bord; the bords from No. 6 to 10 are driving. The workings in this section at present are all under the land.

No. 8 west level:—This level has been advanced 1,250 feet during the year, being now 2,900 feet long. In No. 1 chute, the top pillars have been drawn to the chute. No. 3 to 5 pillars are now being drawn and will be continued to the chute. In No. 2 chute, the bords from No. 3 to 8 have all been driven and the pillars are now being drawn. No. 3 chute has been driven and the five bords on each side, from No. 3 to 8 have been driven and the pillars are being drawn. No. 4 chute has been driven and the top bords on each side from No. 3 to 7 are driving. The old main-slope sinking was tapped by a bore-hole from the face of this level, and the water accumulated there, is now being drained off preparatory to continuing the levels. Average cover over the pillars on this level is 1,100 feet of solid strata, all undersea, The bords in this section are being driven 12 feet wide with an average of 37 feet of pillar.

No. 8 east level:—This level was advanced 1,460 feet during the year, being now 3,750 feet long. The pillars in No. 1 chute from No. 2 up on the east side, and from No. 5 up on the west side, have been drawn to within 80 feet of the chute. In No. 2 chute the five top pillars on each side have been drawn, and the pillars from No. 3 to 5 on each side are now drawing; In No. 3 balance the five top bords on each side have been driven to their limit and the pillars are started back; No. 4 balance the six top bords on each side are driving. No. 5 balance is up to No. 7 bord and is still advancing, none of the bords have been started yet on this balance; No. 6 balance has been started and is now up to No. 2 bord. All bords in this section are driven 12 feet wide with an average of 37 feet of pillar. The downthrow fault met in the low-level of this section has been gone through, it caused practically no inconvenience in the high-level working, 50 feet distant. The average cover over the pillars in the section is 1,100 feet of solid strata.

The riding-rake slope from the surface to No. 7 level which is nine feet wide is kept in good repair, the back angle-slope from No. 7 to 8 level has been cleared and timbered as a travelling-way and is in excellent condition, the other travelling ways are in good condition.

The quantity of air in ciculation is 110,000 cubic feet a minute; this quantity is produced by a Walker patent indestructible fan 7 by 18 feet, w. g. 2.8 inches. The air is split once, at No. 8 levels, the west-side split being used to ventilate the No. 9 levels, which have only been driven about 50 feet on each side, returning up the back angle-slope to the west side of the mine. The length of the fan-drift is 36 feet, the sectional area being 140 square feet: the fan-shaft is 10 by 10 feet in section: the fan is connected to a 16 by 30 inch single-engine by five 3-inch cotton ropes, geared 9 revolutions of the engine to 12 of the fan; the whole being enclosed in a brick house 18 by 47 feet. The stoppings are cement, bricks in cement, booms laid in cement, double boards with brattice cloth between, brattice cloth. The mine is non-gaseous.

There are 674 Marsaut, lead-plug safety lamps on hand, of this number 553 are in use, leaving 121 in reserve. No open lights are used.

There is an average of 432,000 gallons of water pumped from the mine in 24 hours. All water lines are cast iron, most of which are wood lined: all air lines and steam lines are wrought iron: steam lines being covered with asbestos air-cell covering.

The mine is damp and free from dust, no sprinkling is done.

The number of men employed in each section is as follows:—

No. 7 east	181
No. 7, west	88
No. 8, east	138
No. 8, west	116
Sinking	14
Total	537

There are 116 men and boys employed on the surface.

Officers:—

W. D. Barclay, general manager.

J. McGillivray, superintendent.

H. A. McLeod, resident mine-manager.

Alex. Ross, mechanical superintendent.

John Cassidy, underground manager.

Neil P. McLellan, assistant underground manager.

S. J. Doucette, overman.

George Blackwood, overman.

James P. McNeil, overman.

Dan C. McKenzie, night examiner.

Samuel Price, night examiner.

The average thermometer reading in the return airway near the workings is 64 degrees,

The steam generating plant consists of four 212 h. p. Babcock & Wilcox boilers, and two 250 h. p. Heine boilers, arranged in three batteries, all water tube. These boilers are fed by a Northey duplex pump 7 by 4.5 by 10 inches, as an auxiliary the boilers are equipped with one 1.5-inch and one 2-inch Penberthy injectors for each battery: two 15 h. p. Matheson vertical boilers: one 35 h. p. Matheson vertical boiler in good condition, but not in use, a total of 1,413 horse power.

The surface machinery consists of one Dixon double haulage engine 16.5 by 30 inches, geared 3 to 1; diameter of drums 7 feet, 10 inches and width of face, 3 feet, 6 inches; containing each 5,500 feet of 1⅛ inch plough-steel ropes; speed 200 revolutions a minute, steam pressure 100 pounds to the square inch: one 100 h. p. haulage-engine for travelling slope, 12 by 16 inches, geared 7 to 30, diameter of drum 4 feet, containing 4,000 feet of 1-inch plough-steel rope: one 20 h. p. Flory engine, geared to single drum, used in yard to dispose of mine waste by lowering boxes to dump at shore, this engine is now used as a tail-rope engine, having been equipped with an additional drum for this purpose: one 35 h. p. and one 15 h. p. Flory geared-hoists, the former with tandem drums, not in use at present: one 12 by 12 inch, 70 h. p. Matheson horizontal centre-crank engine used to operate the coal washery: one 11 and 18 by 18 inch cross-compound non-condensing high-pressure steam-engine 90 h. p. to be used to operate the coal briquetting plant: one direct current dynamo and engine, 6 pole, 400 amperes, 125 volt dynamo direct connected to a 75 h. p. Robb engine 12 by 12 inches, 280 revolutions a minute, capacity 900 standard 16 c. p. lamps: one, two-stage Ingersoll-Sergeant air compressor, cross-compound steam and air, capacity 3,100 cubic feet of free air a minute; steam end 20 and 36 by 48 inches, air cylinders 19¼ and 32¼ by 48 inches stroke, Corliss steam valve gear; air and steam pressure 100 pounds to the square inch: one Ingersoll-Sergeant compressor class A, size 12 by 18 inches, not in use: one Walker patent indestructible fan and engine, size of fan 18 by 7 feet, speed 100 revolutions a minute, w. g. 2.8 inches; single engine 16 by 30 inches, connected to fan by five 3-inch cotton ropes; ratio of fan and engine 12 to 9 revolutions: one Schiele fan 84 by 18 inches, two ports of entry each 27.5 by 13 inches, discharge port 25 inches diameter; not in use at present: one Knowles compound pump at Big River, used to supply boilers at mine should the town water be shut off: one Blake pump 5 by 7 by 8 inches, used to circulate water through the jackets of the air compressor: one Northey pump, 10 by 4.5 by 18 inches, used for cleaning boilers and for fire purposes: one Northey duplex feed pump 7 by 4.5 by 10 inches: two Brown shaking-screens, feeders, tipples and picking-belts, run by two 8 by 8 inch Brown vertical engines: one conveyor and one elevator for slack coal, driven by 1⅛ inch rope-drive by an 8 by 8 inch Brown vertical engine: one double chain-creeper to elevate full boxes on bankhead, driven by 1⅛ inch rope-drive by a 10 by 10 inch Robb engine: one Blake-Knowles 1,500 h. p. vertical closed type, feed-water heater: briquetting plant complete with non-condensing engine and boiler and all accessories, capable of producing 100 tons of briquettes a day of 10 hours. The machinery consists of one set of chain elevators for elevating the small coal into the mixer: one pitch cracker for breaking up the pitch: one mixer for mixing the coal and pitch in the proper proportions: one disintegrator for pulverizing the coal and the pitch: one set of chain elevators for elevating the ground coal and pitch into the vertical heater: one superheater for superheating the steam: one vertical heater: one endless conveyor for conveying the finished briquettes to the outside of the machine house: one Ovoid briquetting machine fitted with the latest improvements, producing uniform briquettes of ovoid shape, weighing about four ounces each, pressed from both sides simultaneously to a pressure of two tons to the square inch, and having all corners and edges rounded off: one elevator and conveyor for conveying the material from the machine and across the machine house to the storage bunkers: one cross-compound, non-condensing high pressure steam engine 90 h. p. size 11 and 18 by 18 inches: one locomotive type boiler 40 h. p. All the machinery was made in England, boiler and engine by Davy-Paxman, briquette machine by Yeadon & Sons; superheater by Heenan & Froude. The washing plant which was manufactured by the Jeffrey Manufacturing Co., consists of a raw-coal bin of 150 tons capacity with two openings in the bottom provided with chutes and valves connected to feed jigs, these valves can be so regulated as to feed the proper amount of coal to the jig beds, automatically: the jig is of the New Century two-compartment type with a capacity of 20 tons an hour; by means of plungers the coal and water is given a jigging motion, thus separating the impurities from the coal, the coal being flumed into a settling tank, the refuse settling to the bottom of the jig and there collected and elevated to the main refuse elevators. The settling tank is built of wood and is about 30 feet long, 12 feet wide by 10 feet deep, with sloping sides. The good coal that passes over the jig-beds is deposited at one end where a washed-coal elevator takes same away. The tank has a partition near receiving end, all water coming from the washer must overflow the partition, and will carry a varying quantity of fine coal with it, and as the water travels to the opposite end of settling tank, the fine coal passing over the first partition will be deposited in the bottom of the tank. At the other end of the tank, water again overflows another partition into the pump supply and is practically clear and fit for use in the washer again. The fine coal thus deposited is returned to the washed coal elevator by means of a very slow speed scraper-conveyor; the washed coal elevator and the refuse elevator are of the drainage bucket type; a horizontal centrifugal pump circulates the water from the settling tank to the jigs as required: the machinery is driven by a 12 by 12 inch Matheson horizontal centre-crank engine of 70 horse power.

The main haulage rope is 1⅛ inch diameter, the travelling slope rope is 1 inch diameter.

For fire protection, a line of 4 inch pipe connected to the town main, runs through the yard; there is a hydrant at each end of the yard. A 2 inch pipe-line, laid in and around the bankhead, with hose-connections at different points: 95 pounds water pressure in pipe lines: 300 feet of rubber hose and 500 feet of cotton hose with reel ready for use.

The underground machinery consists of one Jenckes hoist, 7 by 9 inches, single drum, used in developing the sinking at No. 9 lift; driven by compressed air: one 18 and 30 by 12 by 20 inch compound Cameron, pot-valve, wood-lined pump at No. 3 lift on the back slope, capacity 500 gallons a minute, pumping to surface against a head of 382 feet, driven by steam: one 30 by 9 by 36 inch duplex Jeansville, pot-valve steam pump, at No. 4 lift on the back slope, capacity 700 gallons a minute, pumping to surface against a head of 495 feet, driven by steam: one 20 by 9 by 20 inch Cameron pot-valve, wood lined pump at No. 5 lift on the back slope, capacity 350 gallons a minute; pumping to either No. 4 or No. 3 pumps as desired, driven by compressed air: one 18 by 9 by 20 inch Cameron, pot-valve wood lined pump at No. 6 lift on the back slope, capacity 330 gallons a minute, pumping to No. 5 pump, driven by compressed air: one 18 by 7 by 20 inch Cameron horizontal plunger pump at No. 7 lift on the angle slope, capacity 200 gallons a minute, pumping to No. 6 pump, driven by compressed air: one 16 by 6 by 18 inch Cameron horizontal plunger pump at No. 8 lift on the angle slope, capacity 150 gallons a minute, pumping to No. 7 pump, driven by compressed air: one 10 by 5 by 13 inch Cameron horizontal plunger pump in the angle slope sinking at No. 9 lift, pumping to No. 8 pump, driven by compressed air: two 12 by 6 by 18 inch Cameron horizontal plunger pumps on the surface, not in use: one 10 by 5 by 13 inch Cameron horizontal plunger pump on surface, not in use: one 5 by 3.5 by 7 inch Cameron horizontal plunger pump, not in use.

Haulage ropes underground all ⅝ inch diameter.

The output for the year amounts to 289,704 tons, a decrease of 1,883 tons as compared with last year. The quantity of powder used being 61,489 pounds of Acadia No. 3. A production of 4.55 tons for each pound of powder used.

Timber used in mine:—

Props	1,065,974	lineal feet
Booms	265,092	" "
Sleepers	37,350	" "
Total	1,368,416	" "

Fifty-six ℔ steel rails are used on the haulage slope, 30 ℔ rails on the travelling slope and levels, and 18 ℔ rails on the balances and in bords. There are 7,480 feet of track laid with 56 ℔ rails, 17,365 feet with 30 ℔ rails, and 102,154 feet with 18 ℔ rails.

The improvements worthy of note, during the year, are, the enlarging and securing of the return airways on each side of the mine: the travelling road from No. 8 to No. 7 cleaned and repaired: the erection of the coal washing plant: the erection of the briquetting plant: the placing of a feed water heater and feed pump: the hanging of new power transmission lines in the mine; and the increase in mine pumping machinery.

MABOU MINE.

Situate at Mabou, Inverness County.

This property is at present held by the Eastern Trust Company of Halifax.

The mine has not been in operation since it became flooded on January 17th, 1909.

A trestle about 700 feet long built of native wood, connects the slope with the bank-house. The bank-house is of wood and is 227 by 27.25 feet, with an ell 68 by 22.5 feet. The other buildings consist of one boarding house 109 by 26.5 feet, 2½ storeys: one office 20.5 by 12.5 feet: one forge and work-shop 52.5 by 25.5 feet: one wash-house 25 by 20 feet: one boiler-house 27 by 37 feet with a shed 16 by 42 feet: one boiler-house 21 by 38 feet with a shed 16 by 42 feet; one boiler-house 25 by 50 feet with a shed 16 by 42 feet; one engine-house 50 by 27 feet: one engine-house 27.5 by 32.5 feet: twelve double houses 1½ storey, 40 by 24 feet with kitchens 13 by 9 by 8 feet attached: one dwelling house 20.5 by 15.5 feet with ell 15.5 by 12.5: feet: one barn 24.5 by 20.5 feet.

The seam on which the slopes are driven is known as the seven feet seam. The workings are on the eight feet seam. The pitch of the seam varies from 40 degrees at the outcrop to 29 degrees for the first 700 feet of the slope, to 9 degrees dip for about 200 feet and then to a uniform dip of 21 degrees. The direction of dip is north 20 degrees west.

The slope, 10 feet wide, is 2300 feet long from the surface. The general pitch of seam is 21 degrees.

The method of working was bord-and-pillar: no development work during the year.

A fall has occurred in the air-slope at the surface and same is securely fenced.

The steam generating plant consists of two Matheson boilers, 80 h. p. return tubular, 5 by 14 feet, externally fired: two Cooper boilers, 80 h. p. return tubular, 5 by 16 feet: three Mumford boilers, 100 h. p. each, a total of 620 h. p.

The surface machinery consists of one duplex hoisting engine 20 by 32 inches with two drums, 5 feet in diameter, directly connected: one, four-pole electric dynamo, marble switch board: one duplex air compressor with receiver, steam cylinders 20 by 30 inches, air cylinders 20 by 30 inches: one Sturtevant mine fan 77¼ inches diameter; inlet, 60.5 inches diameter; outlet, 48.5 by 48.5 inches, directly connected to a 7 by 10.5 inch engine; the fan when running at 190 revolutions a minute produces a current of 20,000 cubic feet of air a minute with a w. g. of 1.3 inches; one screening plant, consisting of picking-table, screen, tipple, elevator, and engine.

The underground machinery consists of two Cameron horizontal plunger pumps 12 by 7 by 13 inches, capacity 200 gallons a minute: two Cameron horizontal plunger pumps, 8 by 4 by 12 inches, capacity 65 gallons a minute: one fly-wheel pump: one duplex pump: two Ingersoll mining machines: one Harrison mining machine: two Radial mining machines.

PORT HOOD MINE.

Situate at Port Hood, Inverness County.

Owned by the Port Hood-Richmond Railway & Coal Company, Limited.

The mine has not been in operation since it became flooded on June 22nd, 1911. No development work during the year.

The thickness of the seam is six feet, average pitch 22 degrees; direction of dip north 83 degrees west.

The slope is 3,070 feet long, and 10 feet wide. The travelling slope is 8 feet wide.

The method of working was bord-and-pillar, the pillars being drawn while advancing.

The bankhead which is of wood is 105 by 33 feet: boiler-house 46 by 57 feet: power house 46 by 69 feet: blacksmith and carpenter shop, and lamp house 35 by 60 feet: storehouse 125 by 35 feet: store-house 20 by 25 feet: wash-house 20 by 40 feet: scale-house 15 by 30 feet: office 25 by 35 feet: forty-three miners cottages, single, 22 by 24 feet.

The average quantity of water pumped from the mine in 24 hours, previously to the flooding was 160,000 gallons.

The mine was not dusty, but slightly gaseous; no sprinkling was done.

As a large part of the machinery and equipment has been disposed of by the company, I cannot now say what the machinery at the plant consists of.

The mine has been visited frequently during the year to obtain a record of the action of the water, in the mine; the slope has been timbered and secured, to the water's edge for this purpose.

RICHMOND SHAFT.

Situate at Port Malcolm, Richmond County.

This property is owned by the Canadian Consolidated Coal Company.

The mine has not been in operation since September 1st, 1908, on which date it was stopped as the faces were approaching old workings which were never definitely located.

The seam is known as the five feet seam and stands on an angle of 85 degrees. The direction of dip is north 67 degrees west.

The shaft is 200 feet deep on an angle of 85 degrees, following the seam, and is 15 by 6 feet, divided into three compartments.

While the mine was working the average quantity of water pumped in 24 hours was 129,600 gallons.

The buildings and machinery are the same as previously reported.

RICHMOND SLOPE.

Situate at Port Malcolm, Richmond County.

This property is owned by the Canadian Consolidated Coal Company.

The mine has not been in operation since January 1st, 1909, on which date it was decided to try and locate the main bed of the coal where the seam is not so steep.

The seam is known as the four feet seam, it parallels the five feet seam and is about 160 feet south of it. The direction of dip is north 85 degrees west.

The slope, 800 feet west of the shaft, is 288 feet in length and is 6 by 6 feet inside of the timbers; timbered through the surface with 8 by 10 inch sawed timber set four feet centers, and lagged with 2 inch plank. The slope follows the vertical seam to the eastward and is on an angle of 22 degrees.

Very little water was met, a small Worthington pump being capable of handling all the mine-water.

The buildings and machinery are the same as previously reported.

Some trial pits are now being sunk at Whiteside, Richmond County, where it is thought the seam can be located and at an easier angle. It is to be hoped that Mr. Pearl will discover something there which will be worth reporting next year.

Yours respectfully,

W. F. DAVIS,

Deputy Inspector of Mines,
Inverness District.

Timber used underground Inverness No. 1 Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	7	5 d	152282	1065974
Booms				
	14	5 d	3928	54992
	12	5 d	12110	145320
	10	5 d	6478	64780
				265092
Sleepers		Width of face and thickness		
Spruce	6	6x6″	1615	9690
	8	4x4″	1769	14152
	4	4x4″	3377	13508
				37350
			Total	1368416

Accident report Inverness Mine from October 1st, 1911 to September 30th, 1912.

INVERNESS MINE.

No.	Date		Name	Age	Remarks
	1911				
1	October	2	John McEachern	34	Miner. Fall of rock, leg broken.
2	Dec.	6	Rayo Bettinger	19	Miner. Fall of coal, right leg and back bruised.
3	"	19	Alex. Ferguson	50	Bratticeman. Struck by box, hips bruised.
	1912				
4	Jany.	25	John C. McNeil	19	Cage runner. Caught between boom and box, leg broken.
5	Feby.	8	Charles Fraser	30	Miner. Thrown against pit box while riding on balance cage, left leg slightly bruised; head cut.
6	"	12	Francis O'Brien	16	Driver. Caught between box and side, little finger left hand badly bruised.
7	"	12	Dan Judson	32	Miner. Fall of rock, toes of left foot bruised.
8	March	9	Leo Copan	13	Chute runner. Struck by lump of coal, bruised knee.
9	"	9	Nicolas Fevis	30	Miner. Fall of rock, back and kidneys injured.
10	"	15	Dougald McDougall	20	Loader. Fall of coal, finger cut.
11	"	18	Duncan J. Gillis	20	Loader. Fell down chute, lip cut and face scratched.
12	April	13	Edward V. Fisher	35	Miner. Fall of coal, head cut.
13	"	22	Florian Leon	32	Miner Fall of rock, shoulder and leg bruised.
14	"	22	Leonard West	25	Miner. Fall of rock, right hand cut.
15	"	19	Lawrence Tannery	23	Pump repairman. Caught between box and end of pipe, little finger left hand, broken.
16	"	25	John A. Ferguson	29	Miner. Balance gate fell on foot, two toes broken.
17	"	30	Duncan McQuarrie	27	Miner. Slipped on rail and fell, left arm cut at elbow.
18	May	3	Mastafa A. El'Shedley	16	Pump repairman. Placed his finger in opening between plunger and crosshead, top of index finger, right, smashed.

19	"	3	Alex. Dan McNeil	14	Coal picker. His pick caught in lower edge of picking belt drawing his foot against the belt which cut his leg off below the knee, left leg amputated.
20	"	4	Wm. R. McInnis	31	Miner. Fall of rock, right foot bruised.
21	"	4	John H. Smith	25	Cage runner. Caught between box and prop, right hand cut.
22	"	6	Joseph Guilliaume	14	Trapper. Caught between box and door, collar bone fractured.
23	"	9	Angus McLellan	29	Miner. Fall of rock, head cut.
24	"	10	Andrew Cassidy	28	Miner. Fall of coal, head, shoulder and back bruised; two teeth knocked out.
25	"	13	Lauchy Fraser	20	Pumpman. Slipped on rail, right arm sprained.
26	"	14	Leopold Vanherick	26	Miner. Caught between cage and ballast box, right leg bruised.
27	"	14	Arthur Morrell	13	Driver's helper. Rail fell from tram, finger cut.
28	"	15	Wm. D. McDonald	20	Cage runner. Struck by balance cage, leg bruised.
29	"	16	Urban Virgil	30	Miner. Fall of coal, back and right foot badly bruised.
30	"	16	Ronald McDonald	16	Driver. Caught between bow of shafts and box, right leg bruised.
31	"	29	John Morrell	28	Miner. Fall of coal, thumb cut.
32	"	29	Thomas J. McKay	17	Landing tender. Struck by box, right shoulder dislocated.
33	June	19	Fred McKenzie	16	Driver. Caught by door, hips bruised.
34	July	9	John McKay	22	Cage runner. Struck by balance cage, left leg broken above ankle and hip dislocated.
35	"	10	Martin Gillis	22	Cage runner. Caught between edge of box and roof timber, two fingers of left hand badly cut.
36	"	10	Gaston Denemoustier	22	Miner. Roof timber fell, one finger each hand bruised.
37	"	16	Allan McMillan	24	Miner. Fall of rock, right hand cut and bruised.
38	"	16	Pat Hannigan	40	Miner. Fall of coal, heel right foot bruised.
39	August	15	Vance McLeod	27	Electrician. Fell from electric light pole, left elbow dislocated.
40	"	15	William Judson	16	Pit box oiler. Caught between boxes on bankhead, left leg injured.

No fatal accidents in this district this year.

NOTE.

Mr. E. B. Paul was appointed to succeed Mr. A. V. Cameron, who resigned from the position of Deputy Inspector of Mines for the Cumberland District, on March 15, 1912.

Mr. Cameron's report of progress to March 15th is embodied in Mr. Paul's report.

Springhill, N. S.
October 21, 1912.

HIRAM DONKIN, ESQ.,
Deputy Commissioner of Public Works and Mines,
Halifax, N. S.

DEAR SIR:—I beg leave to submit to you the report on the Coal Mines of Cumberland County for year ended September 30th, 1912.

MINUDIE MINE, RIVER HEBERT.

This Mine is owned and operated by the Minudie Coal Company, Limited.

The slope is down 2700 feet is 5 feet 6 inches high by 10 feet wide.

The bankhead and all other buildings on the surface are of wood, except the powder magazine, which is of brick.

The seam is known as the Minudie: it is 3 feet thick with a clay parting in the centre, varying from 3 to 12 inches in thickness. The dip is to the south-west at an angle of 19 degrees.

The Mine is worked on the longwall system; and the haulage is done by horses and putters.

There are 32000 cubic feet of air a minute in circulation produced by a 7 foot Stine fan which is belt driven. The Fan-drift is 7 by 7 feet.

The water from the mine is discharged by a steam-pump, The average daily quantity about 144000 gallons.

This mine is naturally damp throughout, is very well ventilated, and very little gas is found.

The workings are divided into 7 sections:—

There are 20 men in section 1.
“ “ 14 “ “ “ 2.
“ “ 12 “ “ “ 3.
“ “ 7 “ “ “ 4.
“ “ 10 “ “ “ 5.
“ “ 14 “ “ “ 6.
“ “ 10 “ “ “ 7.

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Officers:—

John S. Barton, manager.

Alex. Stewart, underground manager.

Joseph Barton, day overman.

Daniel Arsineau, night overman.

Time of Inspection visits:—

1912.

First visit made March 30th
Second “ “ April 23 -24.
Third “ “ May 14 - 15.
Fourth “ “ June 26 - 27.
Fifth “ “ July 24 - 25.
Sixth “ “ August 20 - 21.
Seventh “ “ Sept. 17 - 18.

The slope has been driven 400 feet during the year. The west levels are to the boundry line, except the 2500 lift about, 500 feet from the slope east and west. The east level above the 2500 feet lift not having been driven.

Safety lamps are now used in this mine, there being 150 the Marsaut type.

No changes have been made on the surface during the year.

There were used 2850 ℔ of dynamite and 285 kegs of powder.

Surface machinery:—

One Stine fan, 7 feet diameter.

One pair hoisting-engines 12 by 15 inches, geared 4½ to 1, 75 h. p.; drum 5 feet diameter.

One fan engine 10 by 12 inches, 25 h. p.

One single engine 12 by 30 inches, running sawmill.

One centre-crank engine, 8 by 12 inches, screening-plant.

Two locomotive boilers, about 300 horse power.

Four return-tubular boilers, about 300 horse power.

Underground machinery:—

One pump 18 by 7 by 24 inches, capacity 18,000 gallons an hour.

One pump 4 by 10 by 12 inches.

Rails in mine:—

6,000 feet of 18 ℔ rails.

3,000 feet of 12 ℔ rails.

VICTORIA MINE, RIVER HEBERT.

This mine is owned and operated by the Minudie Coal Company, Limited.

The bankhead and all surface buildings are of wood. The slope is 10 by 6 feet down 100 feet in lower seam, which is 30 inches thick with a clay parting 14 inches thick in the center. The dip is to the south-west at an angle of 20 degrees.

Surface machinery:—

One double hoist 7 by 10 inches, drum 2 feet.

One locomotive boiler. about 50 horse power.

Two vertical boilers 48 inches by 7 feet, about 50 horse power.

Underground machinery:—

One Blake pump.

One pump 5¼ by 3½ by 6 inches.

SPRINGHILL, NO. 2 MINE.

Operated by the Dominion Coal Company.

The bankhead is of wooden frame covered with corrugated iron and contains:—

Three revolving coal-tipples.

Two end-tipples.

Three shaker-Screens.

One picking-belt.

One conveyor.

One rotary screen.

The Colliery buildings are:—

One hoisting-engine house, iron on wooden frame.

One rotary-house, iron on wooden frame.

One pocket-building, iron on wooden frame.

One lamp-house, cement and brick.

One power-house, cement and brick.

NO. 2, WEST SEAM.

This slope is driven in what is known as No. 2 seam. It has a thickness of 8 feet 4 inches, and the slope is down at the present time 5,635 feet, having been driven last year 1,420 feet. The 4000feet west level has been driven 1,440 feet, which makes total distance from slope 3,580 feet. The east 4000 feet level has also been driven 2,322 feet making total distance from slope to face 4,460 feet.

The mine is worked bord-and-pillar. The bonneted Marsaut safety-lamps are used, with good satisfaction.

The coal is hoisted in rakes of 12 cars each, and haulage on the levels is done entirely by horses. The levels in operation are east and west 3300 feet, and 4000 feet east and west. The main ropes are 1¼ inch and the sinking ropes $\frac{7}{8}$ and $\frac{5}{8}$ inch.

The ventilation is produced by one Capell blow fan 15 feet by 5 feet, at No. 2 air-slope, assisted by a Capell exhaust fan at No. 5, slope circulating at 100 feet from surface, 130,000 cubic feet of air a minute and at 3300 feet lift, 57,000 cubic feet of air a minute, with fan-drift area 60 feet, and 6 inch w. g. There are four air-splits in mine, with stoppings composed of brick, concrete, and wood.

NO. 1 SEAM.

The 3300 feet level west from tunnel has been driven during the year, 376 feet, giving total distance from tunnel to face of level 788 feet. This is driven from east 3300 feet level, No. 2 seam, to No. 1 seam. There has been a new tunnel driven about 1500 feet, from main slope. This tunnel is driven from 3300 feet level west of main slope 218 feet to No. 1 seam. A new travelling-road is under construction from the 3300 feet level to surface.

The coal from No. 1 seam, at the 2600 feet and 2800 feet levels, is being run down to the 3300 feet level in chutes and by inclines.

The mine is dry in sections, and water is conveyed in ¾ inch pipes from pumps to sprinkle the dry places.

The average Thermometer readings 58 degrees and Barometer pressure on surface 29.5 inches; and underground 30.2 inches.

There were used about 960 lb of saxonite,

The workings are divided into 4 sections:—

There are 164 men in section No. 1, 124 in section No. 2, 98 in section 3, 189 in section 4, making a total of 575.

Officers:—

J. W. Maxwell, superintendent.
W. D. Matthews, manager.
J. C. Nicholson, assistant manager
Wm. Lorimer, underground manager.
Moses Jones, overman.
George Burden, overman
J. C. McNeil, overman.
Burton Langille, overman
Wm. Harris, overman.

Date of Inspection visits:—

1912.

April, 2d, 3d, 6th, 8th, 10th.
May 5th, 6th, 7th, 8th, 9th.
June 12th, 14th, 15th, 17th.
July 8th, 9th, 10th, 11th.
August 6th, 7th, 8th, 10th.
September 9th, 10th, 12th.

All travelling roads are in good condition, except from the 3000 feet lift to surface, where there is one road in the course of construction; the travelling at present being done by way of fan-slope, and pump-slope.

No. 2.

Surface machinery.

Winding engine, direct acting-link-reversing-cylinders, 30 by 48 inches, drum, 7 feet diameter, 5 feet face, 6000 feet of 1¼ inch rope.

One engine, 20 by 18 inches, 260 horse power.

One horizontal engine—12 by 30 inches. 120 h p. used for driving rotary screen.

One horizontal engine, 8 by 12 inches, running fire-door conveyors. 21 h. p.

Four vertical engines—8 by 10 inches. 16 h. p. running picking-belts.

One vertical jigging-screen engine, 7 by 8 inches, 10 h .p.

One small vertical engine 4 by 6 inches running lamp cleaning machine. 1⅓ h. p.

One Capell patent blow, double inlet fan, 15 feet by 5 feet capacity 150,000 cubic feet of air a minute. Nine inch w. g., and 240 revolutions a minute.

Twelve boilers: two Lancashire, 7 by 30 feet, with 2 flues 33 inches, 176 h. p.

Four-72 by 20 inch boilers, corrugated furnace, 200 h. p. each.

Six double-flue cylinder boilers, 5 by 30 feet, with 2 flues 18 inches diameter. Maximum working steam pressure 90 ℔, 150 horse power.

No. 5.

As No. 5 is the return airway to No. 2 slope, and I assume when it is timbered to the halfway level, it will be used for lowering timber to that district, therefore I am including No. 5 machinery in the report of No. 2 mine.

One direct acting engine 30 by 48 inches, drum 7 feet diameter, 5 feet face: 6000 feet of 1¼ rope.

One Capell patent blow and exhaust fan, diameter 18 feet, 4 feet 6 inches wide, capacity 150,000 cubic feet of air a minute. 7 inch w. g. at 170 revolutions.

Two boilers 67 by 18 inches. 150 h. p.

Underground Machinery:—

No. 2.

One haulage engine, 16 by 20 inches, geared with four drums, 5 feet, width 2 feet. 9700 feet of ½ inch rope.

One Jeansville duplex double plunger pump, 28 by 9 by 36 by 10 inches suction and discharge: capacity 500 gallons a minute, head 644 feet, at 1300 level.

One Jeansville duplex double-plunger pump, 22 by 7 by 24 by 8 inch suction and discharge: capacity 332 gallons a minute, 460 feet head at 2400 level.

Two Blake pumps in duplicate, size 23 by 10 by 30 inches, capacity at 46 strokes, 469 gallons a minute, at 3406 level.

Water Pipe:—

1300 feet cast iron 12 inch pipe, surface to 1300 level.

1100 feet cast iron 9 and 10 inch pipe, 1300 to 2400 level.

500 feet wood-lined 8 inch cast iron pipe 2400 to loop.

500 feet of wrought iron pipe 8 inch loop, to 3400.

Steam pipe:—

1900 feet of 8 inch pipe.

1500 feet of 6 inch pipe.

150 feet of 2 inch pipe.

16 expansion pipes.

3-8 inch gate valves.

2-6 inch gate valves.

SPRINGHILL NO. 3 MINE.

Operated by the Dominion Coal Company.

The surface buildings are engine house, boiler shed, bankhead building, screen-house, carpenter shop, and compressor-house all of wooden frame covered with corrugated iron. Fan-house of brick and cement.

This slope is in what is known as No. 3 seam; it is the underlying seam of the series and has a thickness of 10 feet 4 inches, slope 10 feet wide, is driven 4800 feet, hoisting from 3 lifts: west side of 2600 feet level, west side of 3200 feet level, and east and west sides of 3800 feet lifts.

This mine is worked bord-and-pillar. The coal is hoisted in rakes of 12 cars each, haulage on the levels is by tail-rope and horses. The main ropes are 1¼ inch, others ⅝ inch.

Ventilation is produced by a Capell blow fan, diameter 22 feet by 3 feet 6 inches, circulating at 100 feet from surface, 90,000 cubic feet of air a minute, and at the 3200 feet lift, 71,000 cubic feet of air a minute, with fan drift area of 50 feet and 7 inch w. g. There are 3 air splits with stoppings of brick, concrete, and wood.

There has been very little development in this mine during the year: practically the only work being a new sinking from the 3800 feet level 3000 feet west of main slope. It has been driven 958 feet with airway to east and travelling-road to west, each down 600 feet; crossheads 150 feet apart, and 90 feet pillars.

The travelling-roads are in very good condition except from the 3200 feet lift to surface, where the pump slope and fan slope have been utilized when required.

The mine is dry in sections and water is conveyed in ¾ inch pipes to sprinkle the dry places. The bonneted Marsaut safety-lamps are used.

The average thermometer reading 58 degrees: barometer pressure on surface 29.5 inches and underground 30.2 inches. There is no blasting done in this mine.

The workings are divided into 3 sections:—

There are 156 men in No. 1.
" " 104 " " 2.
" " 85 " " 3.

Officers:—

J. W. Maxwell, superintendent.
W. D. Matthews, manager
J. C. Nicholson, assistant manager
David McSavaney, underground manager
W. A. Wilson, overman
Alex. McLeod, overman
James Scott, overman

Date of inspection visits:—

March 22d, 23d, 24th, 25th, 1912.
April 11th, 13th, 15th.

May 28th, 29th, 30th.
June 6th, 19th, 20th, 22d.
July 14th, 16th, 17th.
August 13th, 14th, 16th.
September 27th, 28th.

No. 3.

Surface machinery:—

One winding engine, 30 by 48 inches drum 7 feet diameter, 5 feet face: 6000 feet of 1¼ inch rope.

One double cylinder hoisting-engine, 6 by 12 inches, 18 h. p. maximum hoisting load 6 tons.

One fan engine, cylinder 24 by 24 inches: 500 h. p., at No. 3 Slope.

Four vertical engines, 8 by 10 inches, 16 h. p. each: three used for picking belt and one used for conveyor at boiler.

One vertical engine 12 by 15 inches, 60 h. p.

One horizontal engine, 10 by 10 inches: 56 h. p. (right hand engine.)

One horizontal engine, same as last. (left hand engine).

One engine 12 by 24 inches, 83 h. p., in Machine shop.

One engine, duplicate of above, now in stock.

One Capell patent blow fan, double inlet, diameter 22 feet, 3 feet 6 inches wide, capacity 150,000 cubic feet of air a minute.

One battery of twelve boilers, double-flue, 5 feet diameter 30 feet long, average grate area 36 square feet. 150 h. p.

One Rand air-compressor high pressure steam cylinder 20 by 36 inches stroke; low pressure steam cylinder 36 by 36 inches stroke; high pressure air cylinder 20 by 36 inches stroke; low pressure air cylinder 33 by 36 inches stroke.

Capacity in free air a minute 3384 cubic feet, at 95 revolutions a minute.

No. 1 MINE.

One engine 15 by 13 inches not in use.

One engine 11 by 12 inches, 29 h. p.

Two locomotive-type boilers 30 h. p. each: 4 feet diameter.

One monarch boiler 30 h. p. spare.

One locomotive boiler same as above at No. 1.

Underground machinery:—

No. 3 Mine.

Special double-cylinder engine 10 by 12 inches, drum 36 inches diameter 30 inches face, geared 5 to 10, friction brake, with capacity of 5000 pounds.

One haulage engine 16 by 20 inches, four drums, link reversing, diameter of drums 5 feet, width 2 feet, 9700 feet of 1 inch rope.

One Jeansville compound-condensing mine pump, 22 and 40 inches by 10 by 36 inches, with independent condensor 10 by 12 by 18 inches at 3200 level, capacity 7500 gallons a minute, head at 1300 feet level 893 feet.

One Cameron pump—22 by 9 by 30 inches: capacity 270 gallons a minute: head to 3200 feet level, 200 feet.

Water Pipes:—

1300 feet 12 inches cast iron pipe, surface to 1300 feet level.

600 feet 12 inches cast iron pipe, 1300 to 1900 feet level.

1300 feet 10 inches, pipe, 1900 to 3400 feet level.

3300 feet 8 inch wrought iron pipe.

600 feet 6 inch wrought iron pipe.

16 expansion pipe.

Compressor pipe:—

3300 feet of 8 inch air pipe.

3000 feet of 6 inch air pipe.

2 expansion pipes.

1-8 inch elbow.

1-6 inch tee pipe.

2-6 inch 45 degree bends.

One Jeansvllle pump 25 and 38 inches by 10 by 36 inches, condensor 10 by 12 by 18 inches. capacity 750 gallons a minute: head to surface 680 feet.

Miscellaneous pumps.

One Cameron pump 15 by 4 by 24 inches, capacity 450 gallons a minute.

Jeansville feed pump (duplex).

No.	219	size	8 by 4 by 8:	air compressor
	261	"	8 by 4 by 8	No. 2 boiler
	369	"	8 by 4 by 8:	freight shed
	720	"	8 by 5 by 8:	No. 3 boiler
	250	"	8 by 4 by 8:	No. 1 boiler
	439	"	14 by 5½ by 12	
	122	"	8 by 4 by 8:	No. 5 boiler
	1564	"	10 by 7 by 12:	No. 3 boiler
	1565	"	10 by 7 by 12:	No. 2 boiler

Fire pump: Northey duplex size 16 by 9 by 12 inches, capacity 750 gallons a minute.

Electric light plant:—

Engine and generator in duplicate—right and left engines—Ideal horizontal straight line cylinder 13 by 14 inches.

Generators—Standard alternating single phase 125 cycles a minute— 10 poles 16 k. w. 1500 revolutions: capacity in 16 W. 16 c. p. lamps.

100 h. p. 1000 lights.

Right hand engine No. 860.

Left hand engine No. 886.

Right hand generator No. 2730.

Left hand generator No. 2853.

SPRINGHILL COLLIERIES.

Fire Hose.

Kind of Hose.	Length		Condition	Situation
2 inch Rubber	100	feet	Good	Car shed
2 "	75	"	Fair	No. 2 Bank
2 "	100	"	Fair	No. 5 Slope
2 "	50	"	Good	Barns
2 "	450	"	Fair	Machine shop
2 "	75	"	New	No. 2 Bank

Kind of Hose	Length	Condition	Situation
2 inch Cotton	150 "	New	No. 2 Bank
2 "	150 "	new	No. 3 Bank
2 "	100 "	good	Railway station
2 "	200 "	new	General office
2 "	100 "	good	No. 5 boiler
2 ½ inch Rubber	500 "	good	On hand reel
2 "	400 "	good	Hose reel
2 "	400 "	good	Railway station

Summary:—

850 feet	of	2	inch	Rubber	hose
700 "	"	2	"	Cotton	"
1300 "	"	2½	"	Rubber	"

Feed-Water Heaters.

Open heaters are used at No. 1, No. 2 No. 3 and No. 5. These heaters consist of a steel cylinder 5 feet diameter, 30 feet long with a receiver on top, about 36 inches diameter, into which the exhaust steam from fan engine is delivered. The feed water is taken from the town supply, at a mean temperature of 60 degrees and passes into the heater from the top down to about 6 inches from the bottom.

Connection of feed pipe to pump is made from bottom and the heater being about 3 feet above the pump ensures a pressure on the pump at all times. The mean temperature of feed water delivered to boilers is as follows:—

No. 1	130 degrees
No. 2	200 degrees
No. 3	200 degrees
No. 5	210 degrees

JOGGINS MINE.

Owned and operated by the Maritime Coal Railway and Power Company, Limited.

The slopes 5 by 10 feet are 3000 feet from the surface to the main deep, with two return slopes 5 by 9 feet. They are in good condition. The mine is worked bord-and-pillar in the undersea area, and longwall elsewhere.

The bankhead is of wood and iron. There are two revolving coal-tipples: two sets of weigh-hoppers: one shaking screen: one picking-belt.

The colliery buildings have wooden frames and metal roofs and walls. They are, haulage engine and compressor house: man-engine house: warehouse: carpenter and blacksmith shop: lamp-cabin.

The seam is known as the Joggins-main. It is 3 feet 6 inches thick. The dip is south 33 degrees west.

There are 30,000 cubic feet of air a minute in circulation, produced by a Capell fan 7 feet in diameter by 4 feet 8 inches wide; directly connected to a 95 h. p. 2200 volt induction motor: motor to run at 400 r. p. m. minimum speed, and one Sturtevant fan 8 feet in diameter by 3 feet 8 inches wide, with one fan house wood and one steel.

The air-shaft is 8 by 10 feet. There are two air-splits one at No. 1 and one at No. 2 landing, with stoppings of wood, concrete and canvas. The average thermometer reading 34 degrees, and the barometric pressure 30.6 inches.

There are 9000 gallons of water pumped an hour.

The slopes have been driven 500 feet to give additional lift, which is now being developed. Levels No. 1 and No. 2 east and west have all been driven 2000 feet. The endless haulage system on No. 1 landing east, is now being operated by an electric motor, while a second electrically operated longwall mining-machine has been put in. The first machine has proved to be suitable for the conditions in this seam of coal. A slack-coal elevator and a rotary screen have been erected, and nut coal can now be made. A saw-mill also has been put in operation.

Endless haulage is used in the main slope and No. 1 level, as before mentioned. The hauling on the other levels is done by horses. The main-haulage rope is 1⅛ inch and the rope on the man-slope is ⅞ inch.

This mine is naturally damp throughout.

There were used last year 15,359 ℔ of Acadia Pellet and 2,163 ℔ of Saxonite.

Employees:—

Miners	200
Unskilled laborers	175
Men on surface	100
Officers	7
Total	482

Officers:—

G. B. Burchell, general manager
Samuel Gray, underground manager
James Fairley, overman
John Graham, overman.
John McKenzie, overman.

Time of inspection visits:—

First visit was made on	March 28th, 29th, 1912.
Second " " "	April 25th, 26th, 27th.
Third " " "	May 16th, 17th
Fourth " " "	June 27th, 28th
Fifth " " "	July 26th, 27th
Sixth " " "	August 22d, 23d
Seventh " " "	September, 19th, 20th.

Surface machinery.

Four Lancashire boilers, 75 h. p.

One haulage engine, 18 by 36 inches.

One man-engine, 10 by 12 inches.

Air compressor, 22 by 24 inches steam; 14 by 24 inches air high pressure; 22 by 24 inches, air low pressure, 1200 cubic feet free air a minute.

Bank-head motor, 40 horse power.

Auxiliary engine, Leonard & Sons, 10 by 11½ inches.

Machine-shop engine, Robb-Armstrong 10 by 10 inches.

Fan engine, Morris machine works, 10 by 12 inches.

Fire-pump, duplex Northey 7 by 4 by 10 inches.

Boiler-feed pump, duplex 6 by 4 by 6 inches.

Tubine pump, auxiliary steam Jeansville, 16 by 5 by 10 inches, for water supply.

Underground machinery:—

One engine 9½ by 10 inches, geared 1 in 5 to a 2 feet 6 inches bullwheel, operated by compressed air.

One engine 6 by 8 inches, in sinking, geared 1 in 4½ to an 18 inch drum.

One 220-volt motor, driven double, reduction gear.

One 3 plunger Jeansville pump, 5 inch plunger with 12 inch stroke.

One 40 h. p. motor auxiliary operated by air.

One Cameron pump 18 by 36 inches.

One Jeansville sinking-pump 16 by 5 by 10 inches, operated by air.

One 30 h. p. 220-volt motor driven hoist, 20 inch drum.

This mine has very little gas and Marsaut safety-lamps are used and give good satisfaction.

MAPLE LEAF MINE.

This mine is owned and operated by the Maritime Coal Railway and Power Company, Limited.

This seam has been proved by sinking a slope 300 feet, and driving east and west. The coal proved to be of a superior quality and the development work was stopped until a railway can be built.

CHIGNECTO MINE.

Owned and operated by the Maritime Coal Railway and Power Company, Limited.

This mine is worked by a slope 2000 feet long, 10 by 8 feet high, in the Chignecto seam 3½ feet, pitching 30 degrees. The air-slope is 8 by 8 feet. These slopes are in good condition to the 1000-feet lift.

The workings at present are the 1000 feet west level, and the 800 feet west level. The longwall method is used.

There has been very little development work during the year as the levels have been driven 800 feet only.

The ventilation is good and gas very seldom found: about 28000 cubic feet of air a minute is in circulation, produced by a Murphy fan operated by a 50 h. p. electric motor.

The bonneted Marsaut safety lamps are in use with good satisfaction.

Pumping is done by a duplex Jeansville pump, 30 by 4 by 24 inches, average water 3000 gallons pumped an hour. The water line and steam line are each 4 inches in diameter: the mine is damp and sprinkling is not necessary.

The travelling roads are in fair condition. There were 2800 pounds of black powder used last year. Average thermometer reading 58 degrees.

This mine is in one section.

Underground:—

Miners	40
Laborers	10
Skilled	7
Boys	5
underground manager	1
examiner	1
Total	64

Surface:—

Skilled	5
Laborers	7
Boys	3
Total	15

Officers:—

John A. Roy, manager

Chas. J. Kent, undermanager

Surface machinery:—

One Hoisting engine 18 by 30 inches geared 5 in 1 to a friction-drum 10 feet in diameter, with rope 1⅛ inches.

The Great Northern Mine, Maccan, and the Black Diamond Mine, have not been in operation during the last year.

E. B. PAUL,

Deputy Inspector of Mines.

Timber used underground No. 2 Mine Springhill Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	4	4	23041	92164
	5½	5	12646	69563
	8	5	24430	195460
	10	5	36849	368490
	12	5	1952	23424
	7	5	60	420
Booms	10	6	26375	263750
	14	6	2160	30234
	10½	9	2861	30034
	12	10	853	10236
S Booms	10	3	24350	243500
	14	10	926	13058
	18	10	14	252
Sleepers		Width of face and thickness		
		3x5	13562	163224
		5x9	829	9948

Timber used underground No. 3 Mine Springhill Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	4	4′	20918	84072
	5½	5′	11524	63382
	7	5′	15827	110709
	8	5′	1915	15321
	10	5′	4544	45440
	12	5′	8938	107256
Booms	14	6′	4067	56938
	10½	9′	3724	38182
	12	10′	1293	15516
	14	10′	231	3234
	12	6′	10	120
	10	6′	6466	64660
Split	10	3′	28092	280920
Sleepers		Width of face and thickness		
		3x5′	9703	90986
		5x9′	429	5148

Timber used underground Minudie Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small ends inches	Number of pieces	Total Lineal feet
Pit props	4	5′	32377	129508
	4½	5′	31176	125292
	5	5′	716	5560
	6	6′	1862	11172
	8	6′	400	3200
	8	7′	389	3112
Booms	10	8′	104	1040
	12	9′	181	2172
	8	6′	382	3056
	10	7′	223	2230
	12	7′	178	2136
Sleepers		Width of face and thickness		
	4	5x3′	1536	6144
	4	5x4′	1000	4000

Timber used underground Chignecto Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	6 4 7	6′ 4′ 6′	12490 12468 216	74940 49872 1512
Booms	10 12	7′ 8′	2156 43	21560 516
Sleepers		Width of face and thickness		
	4	3x4′	675	2700

Timber used underground Joggins Colliery.
Year ended September 30th, 1912.

Class of Timber	Length feet	Diameter small end inches	Number of pieces	Total Lineal feet
Pit props	6	6′	20107	120642
	6 ft. 6′	6′	315541	1104393
	7	6′	219	1533
Booms	10	7′	8509	85090
	13	8′	1785	23205
Sleepers		Width of face and thickness		
	4	3x4′	11949	47796
	6	3x4′	3514	21084

Report of Accidents in Coal Mines of Nova Scotia Cumberland District, Quarter ended March 31st, 1912.

No.	Date	Name of Mine	Name of Person	Age	Remarks
1	Oct. 4	No. 3 Mine	Thomas Canfield	42	Miner. Fall of Stone. Slightly injured.
2	“ 5	No. 3 “	Victor Porter	22	Driver. Hurt between Box. Leg broken.
3	“ 14	No. 2 “	Pat Debay	35	Miner. Fall of Coal. Foot injured.
4	“ 15	No. 3 “	Albert Porter	32	Loader. Fall of Coal. Slightly injured.
5	“ 17	“ “	Ron Buchannan	30	Miner. Caught by Box. Hand injured slightly.
6	“ 19	“ “	Wm. Lambert	22	Shipman. Caught by Box. Hand injured.
7	“ 27	No. 2 “	Arthur Goldrick	23	B. holder. Caught by Rope. Leg Broken.
8	Nov. 1	Joggin “	Philip Nicholson	32	Miner. Fall of Stone. Killed instantly. Accidental.
9	“ 2	No. 2 S. Hill	Charles Wilson	23	Miner. Fall of Coal. Slightly injured.
10	“ 2	“ “	Peter Barton	40	Miner. Fall of Coal. Foot slightly injured.
11	“ 14	No. 3 “	George Newman	31	Miner. Fall of Coal. Slightly injured.
12	“ 14	“ “	Wm. Brennan	38	Miner. Jammed. Slightly injured.
13	“ 25	No. 2 Bank S.H.	Walter Mitchell	46	Bankman. Jammed. Leg slightly injured.
14	Dec. 7	“ “	Dan Chisholm	30	Bankman. Striking against beam. Nose broken.
15	“ 14	No. 2 Surface	Percy Paul	16	Screen boy. Smothered in Culm Car. Killed. Accidental.
16	“ 16	No. 2 S. Hill	Pat Debay	35	Miner. By trollies on slope. Slightly injured.
17	“ 18	No. 3 “	Ed. Babineau	34	Miner. Fall of coal. Slightly injured.
18	“ 18	“ “	Eugenie Noiles	22	Cage Runner. Jammed. Slightly injured.
19	“ 21	“ “	Walter Bulmer	35	Loader. Struck by ginney or prop. Killed. Incompetency of Brake holder.
20	Dec. 30	“ “	Nicholas McGiney	46	Miner. Fall of Stone. Slightly injured.
21	Jan. 17	“ “	Martin Weatherbee	40	Laborer. Struck by timber. Leg broken.
22	“ 26	“ “	Wm. Ruse	56	Shiftman. Fall of Stone. Badly injured.

Report of Accidents in Coal Mines of Nova Scotia, Cumberland County District, Quarter ended March 31st, 1912

No.	Date	Mine	Name	Age	Remarks
23	Feb. 7	" "	Hugh Campbell	50	Laborer. Struck by Box. Leg broken.
24	" 13	" "	Richard Young	35	Miner. Fall of Coal. Slightly injured.
25	" 16	" "	Luke Casey	45	Miner. Fall of Rock. Leg broken.
26	" 17	" "	W. J. Welch	35	Miner. Cut with Axe, not serious.
27	" 27	No. 2 Mine S.H.	Wm. McFarlan	26	Shiftman. Foot Cut. Not serious.
28	Mar. 4	No. 3 S. Hill	Rod Turnbull	30	Miner. Fall of stone. Foot injured.
29	" 4	" "	Hugh Brown	23	Loader. Fall of stone. Leg hurt.
30	" 4	" "	John Henwood	30	Loader. Fall of stone. Face Cut.
31	" 7	No. 3 S. Hill	Robt. Richards	28	Miner. Fall of Coal. Slightly hurt.
32	Mar. 22	" "	Hector McKenzie	42	Miner. Fall of Coal. Killed. Accidental.
33	" 22	" "	Jabez Graham	28	Miner. Fall of coal. Killed. Accidental.
34	" 28	" "	Ruggles Anderson	18	Loader. Run on by Box. Slightly injured.
35	April 8	Minudie	Chas. Collier	26	Miner. Burned with gas. Slightly injured.
36	" 8	"	Peter Dupont	28	Miner. Burned with gas. Slightly injured.
37	May 21	"	Daniel Rector	67	Miner. Fall of stone. Killed. Accidental.
38	June 1	Joggins	James Spears	28	Miner. Run on by Cage. Fractured Leg.
39	" 3	Minudie	James Miller	20	Loc. Fireman. Burned with gas, seriously.
40	" 10	Springhill	Ed. Burke	27	Brake Oiler. Caught in Rope. Arm broken.
41	" 13	"	Alex. Rushton	43	Miner. Fall of stone. Back and Leg hurt.
42	" 19	No. 3 S. Hill	Chas. McCarthy	18	Driver. Run on by Box. Ankle broken.
43	" 27	" "	Herb Bigney	18	Driver. Run on by box. Leg broken.

Metalliferous Mines.

The minerals other than coal, mined in the Province during the year, were Gold, Manganese, Tungsten and Barytes.

The report covering the operations in connection with these minerals by Mr. H. B. Pickings, Deputy Inspector of Mines, is contained in the following pages.

HIRAM DONKIN, ESQ., C. E.,
Deputy Commissioner and Inspector of Mines.

SIR:— I beg to submit to you my report dealing with the metal mining industry of the Province during the year ended September 30th, 1912.

GOLD.

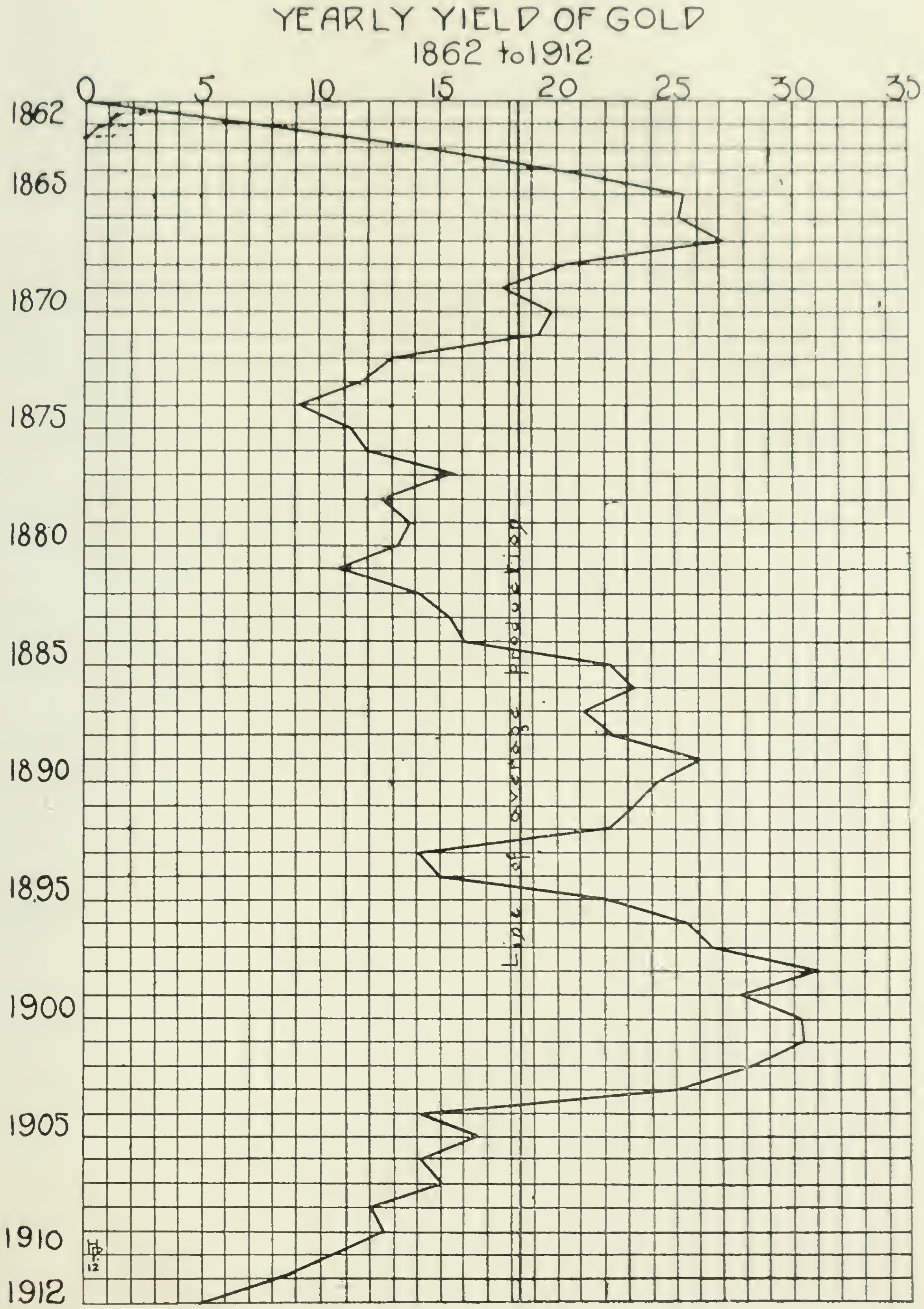
The production of gold was 4,949 ounces recovered from 15,862 tons of gold bearing rocks mined and crushed. This production having a value (at $19.00 an ounce) of $94,031.00 equaling an average recovery of $5.99 a ton crushed.

Compared with the production of the year 1911 this year's production shows three decreases as follows: 2,452 less tons crushed; 3,441 less ounces of gold recovered, and $2.71 less in the value of the average yield a ton.

The gold production is lowest since gold mining was established as an industry in the province; and it is almost needless to say is most disappointing. It is however but justice to the industry to say that it does not fairly represent the extent of the operations carried on, as at several of the districts the principal efforts of the operators were directed to mine development and prospecting rather than to immediate recovery of gold. At Tangier, the Dominion Leasing Co., had at the close of the year commenced only to recover from the set-back caused by the destruction by fire of their shaft-house and power buildings. At Lake Catcha the operations of the Petpeswick Mining Company were almost wholly of a prospecting and ore-development nature, and at Caribou and Fifteen Mile Brook, a great percentage of work done was what the miner terms "dead work." At Shiers Point, and Goldenville the surface equipments have received much more attention than the underground workings.

The properties on which operations were carried on were the following:

Byron Bower	Carleton.
Touquoy, M. J. O'Brien and tributors	Caribou.
Stillwater Mining Co	Moose River.
Switzer Mining Co	Fifteen Mile Brook.
Uniac Mines and Power Co	Gold River.
W. A. Brennan and Tributors	Oldham.
M. J. O'Brien et al	Renfrew.


YEARLY YIELD OF GOLD
1862 to 1912
0
5
10
15
20
25
30
35
1862
1865
1870
1875
1880
1885
1890
1895
1900
1905
1910
1912
Line of average production
H.P.
12

New England Mining Co	Stormont.
Sydney Gold Mining Co	Stormont.
Seal Harbour Mining Co	Stormont.
Boston and Goldenville Mining Co	Shier's Point.
Goldenville Mining Co	Sherbrooke
Dominion Leasing Co	Tangier.
Gladwin Gold Mining Co	Beaver Dam.
S. R. Giffin & Sons	Stormont.
Petpeswick Mining Co	Lake Catcha.

I regret to have to report one fatal accident which occurred at the Dominion Leasing Company's mine at Tangier. Particulars of this accident will be found in the detailed report on this mine.

Generally speaking, the underground workings are in good condition and the requirements of the "Regulations of Metalliferous Mines" have been generally complied with. Some complaints have been made by Mine Managers that these regulations in not making more distinction between "Mining operations" as permanent work and "prospecting operations" as temporary work, impose hardships that are detrimental to the expansion of the industry, and it would appear that there is some justice in their complaint and that this is a matter that should receive consideration, affecting as it does not only gold mining, but all mining and prospecting for minerals other than Coal. Another feature of the Act that is more or less freely criticised is the manner of leasing and holding gold areas for speculation purposes, rather than for mining operations. There is no doubt that this feature of the Act as it stands to-day, is having the effect of causing much property to remain unoperated that otherwise would receive attention. I realize that legislation, to successfully cope with these matters, without being productive of new features possibly just as objectionable as the features to be overcome, is a difficult problem, but at the same time the opinion is expressed that it is possible to pass legislation that will do away, to a great extent, at least, with this objectionable feature, and that such legislation would have an immediate and lasting effect for the expansion of the industry.

The detailed report covering the different districts is appended.

IRON

Since the closing down of the mines, at Torbrook, of the Canada Iron Corporation in 1911, no iron ore has been mined in the province. The Canada Iron Corporation have concentrated ore from their stock pile, however, and shipped several cargoes. Prices have improved, and the above mentioned Company is now commencing operations preparatory to re-opening their mine.

Near Glencoe in Inverness County, considerable prospecting has been engaged in on a very promising body of Iron ore, taken up by John S. Hart.

ANTIMONY.

At West Gore, the West Gore Antimony Co., retimbered a part of their main shaft, but as yet no ore has been mined, and the mill has remained idle during the year.

MANGANESE.

The Nova Scotia Manganese Company at New Ross, continued development work and raised 233 tons of ore recovered from this development work. The new road to tide water by way of Benjamin's Mills, is nearing completion, and stoping of ore is soon to be commenced.

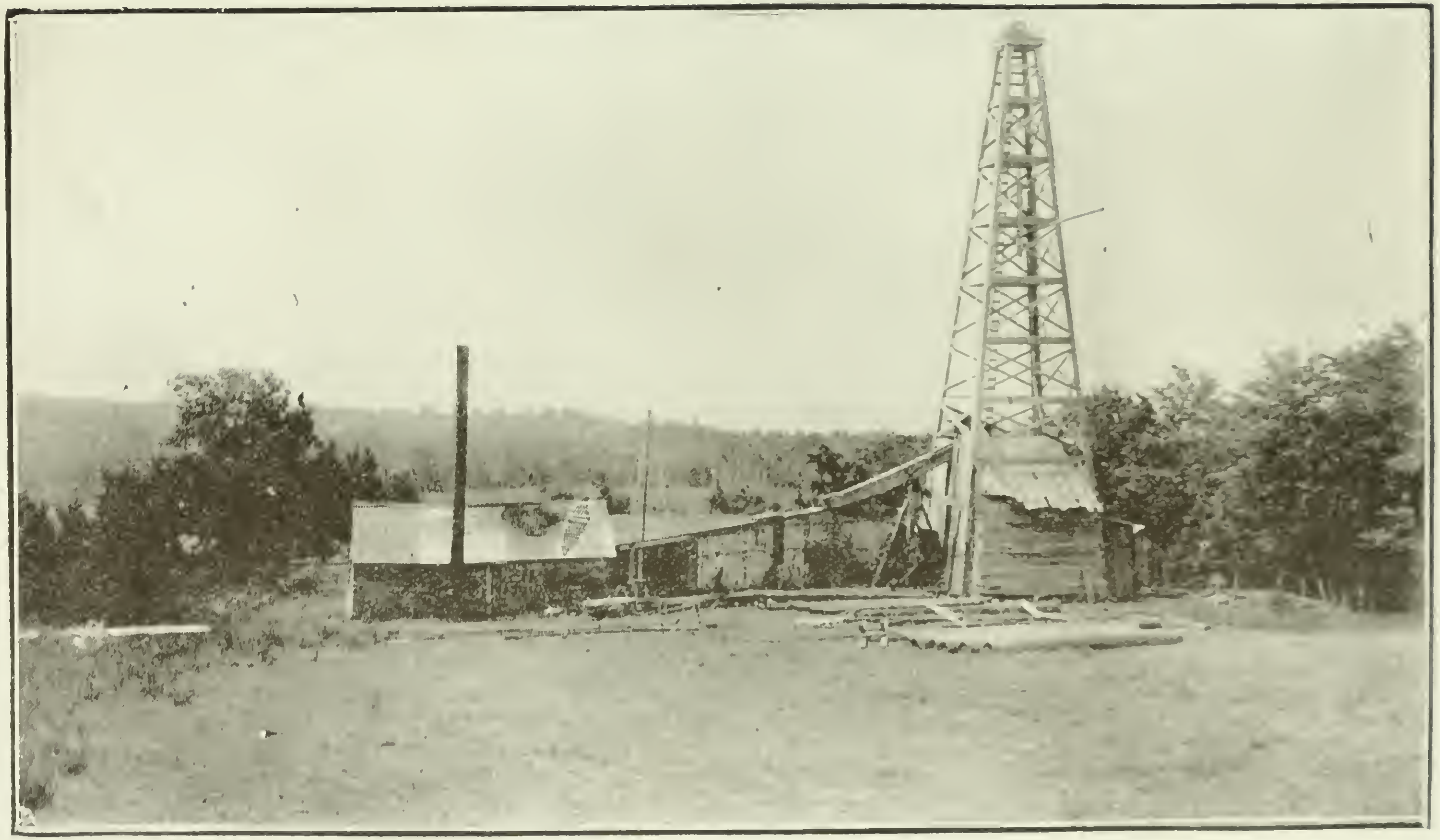
No other properties were operated during the year in connection with the mining of this mineral.

TUNGSTEN.

The first shipment of Tungsten-bearing mineral from Nova Scotia, namely, 14 tons of Scheelite concentrates containing 72% Tungstic Acid, were shipped during the past year from the Scheelite Mines, Limited, Scheelite, Moose River. The concentrating mill constructed in 1911 was operated, producing a very high grade concentrate. Development work at the mines of this Company was continued and prospecting for Tungsten bearing minerals has been engaged in at a number of places in the Province.

BARYTES.

A total of 974 tons of Barytes was mined by the Barytes, Limited, at Scottsville, Inverness Co. This Company have put their new mill in operation, and during the year have shipped their manufactured product as far West as Winnipeg.



Maritime Oil and Gas Company, Drill set up at Number 5 Hole, East Lake Ainsle.

OIL.

The Maritime Oil and Gas Co., Limited, have continued their oil-well boring operations at North Lake Ainslie.

To date, five test-holes have been put down to various depths as follows:—

No. 1 hole	800 feet
No. 2 "	1612 "
No. 3 "	1120 "
No. 4 "	1100 "
No. 5 "	870 "

No. 6 hole is about to be started.

These holes are all located within a territory at North Lake Ainslie, of about one square mile in extent.

Oil sands and natural gas have been encountered in all holes and it is stated that at No. 2 hole over 215 feet of oil sands were drilled through, two of the beds encountered being 75 feet and 130 feet in thickness, respectively. This No. 2 hole has been cased and capped, ready for shooting, which is being delayed until another hole has been put down to the 75 feet bed. The drilling is being done with a standard oil drilling equipment as supplied by the Oil Wells Supply Company. The derrick used is 75 feet high.

The size of No. 1 hole when commenced was 10 inches in diameter, but this was found to be too small on account of the frequent caves, and the size of the other holes was increased, the last holes being 18 inch. This allows of casing and reducing six times, or until the hole has been reduced to 5 3-18 inch diameter.

The last year's work has been on the drilling of No. 5 hole. Progress all through has been greatly retarded on account of the many crevices and beds of quicksands met. No. 6 hole is to be located nearer the lake, and it is hoped will encounter a better drilling formation.

While operations to date have not yet resulted in the property becoming a producer, the promoters express themselves as well pleased with the results of the borings.

OTHER MINERALS.

While prospecting has been engaged in, searching for Molybdenite, Lead, Silver, Copper and other minerals, no production has resulted during the year.

Detailed reports covering the Manganese, Tungsten and Barytes mines will be found immediately following the detailed gold report.

GOLD.

GUYSBORO COUNTY.

GOLDBORO.

NEW ENGLAND MINING CO. John Warner, Superintendent.
(Richardson)

Mining operations were not resumed during the year, but surface prospecting was engaged in to a limited extent and a total of 75 tons of material, recovered from the several veins prospected, was crushed, yeilding 14 ounces 7 dwts. of gold.

SEAL HARBOUR LEASING CO., Dan McAskill...Manager

Production.—From 700 tons of quartz, etc., mined and crushed, 117 ounces of gold were recovered.

During the month of November, 1911, 700 tons of material from the underhand stopes on the "Big Belt" so-called, were mines and crushed. The values recovered were unsatisfactory and the lease for the Seal Harbour Mining Company was given up. The property has not since been operated.

S.R.GIFFIN & SONS. J. S. McQuarrie, Superintendent.
(Goldfinch) George Myers, Foreman.

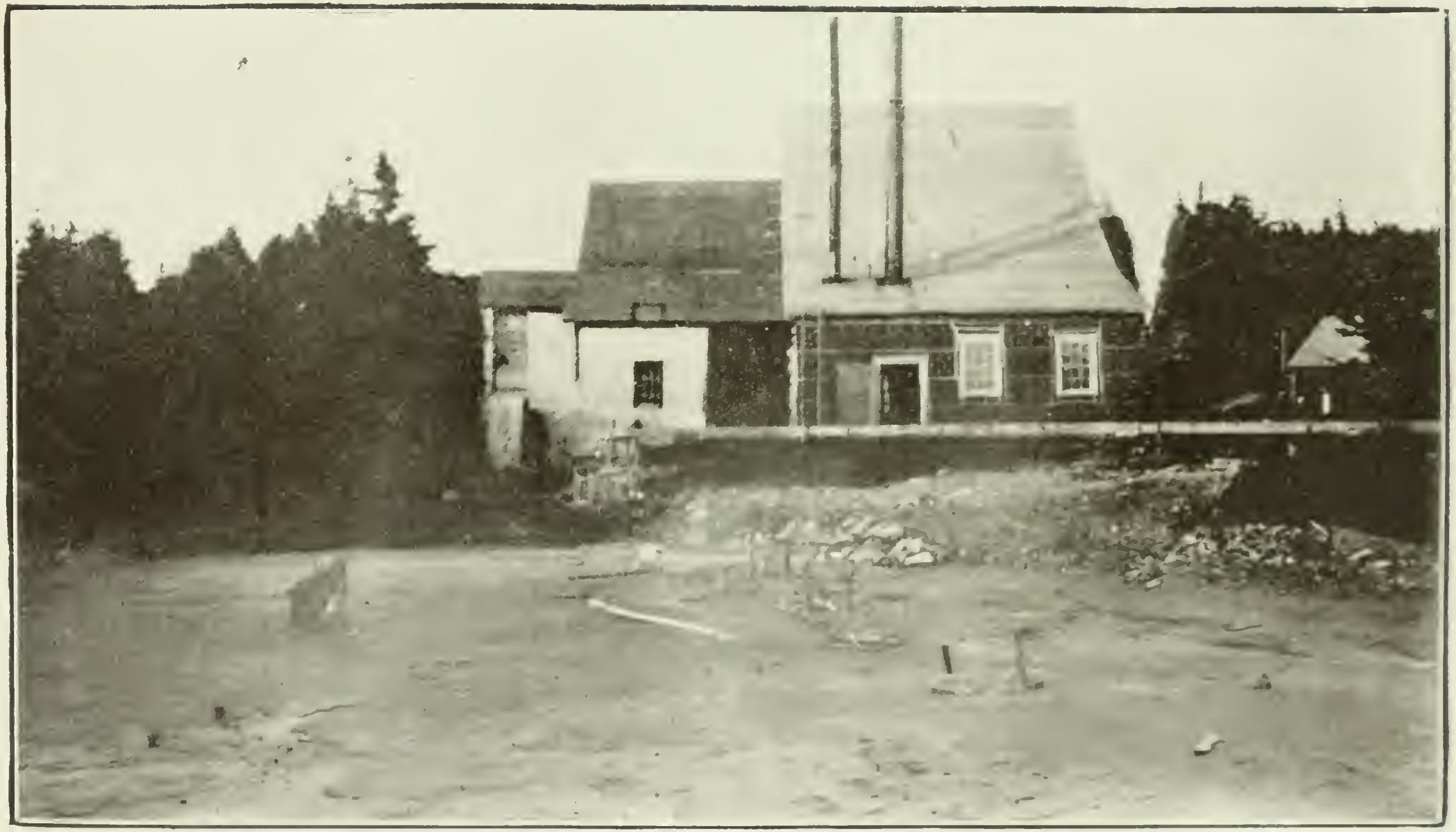
During the year an average of 7 men was employed.

Production.—From 3,238 tons of material mined and crushed, 606 ounces of gold were recovered.

During the summer and early fall of 1911, preparations were made to re-open the "Goldfinch Mine" so-called, and in December, 1911, mining and crushing was commenced.

The East Shaft sunk to a depth of 64 feet by the tributors in 1910 was sunk 12 feet, making its total depth 76 feet, and from the bottom of this shaft an inclined drift, dipping to the East at an angle of 8° to 15°, was driven 350 feet, and underhand stoping carried on, for the total length of the drift. The ore so worked averaging about 3 feet in width by 15 feet in height. While the belt is much larger, this area only, contained sufficient values to warrant mining.

The mill formerly at the Beaver Hat mine was acquired, taken down, and re-set up over the shaft at this property, in addition to this, ablacksmith shop was built.



Boston and Goldenville Gold Mining Company. Crusher. Shier's Point.

The equipment at the mine, most of which is old, consists of the following:

10 Truro Foundry stamps, 700 lb complete, with mortars, etc., (formerly in Beaver Hat Mill).

One Black Rock-breaker.

One 25 h. p. Erie Iron-Works engine.

One 100 h. p. Truro Foundry boiler.

Three Friction hoists.

One Jack head pump, 3 inch suction 3 inch discharge.

One boiler feed pump.

One Rand Number 2 piston drill, operated by steam.

Ore from the stopes is hauled to shaft-bucket, up inclined drift on flat car running on iron rails and operated by friction hoist in shaft-house, the bucket is then raised by separate hoist dumping to iron sorting table at shaft-head.

In addition to the operations at Goldfinch property, prospecting has been carried on at the Jadis property, adjoining to the east.

COUNTRY HARBOUR.

SYDNEY GOLD MINING CO., M. Shannahan...Manager

Production.—From 250 tons of ore mined and crushed, 68 ounces of gold were recovered.

In October, 1911, general repairs were made to the mill and other surface equipment, and during November and December, mining and milling to a limited extent were engaged in. Operations were discontinued in the latter part of December, and to date have not been resumed.

GOLDENVILLE, SHERBROOKE.

At this district the Goldenville Mining Company, A. G. McNaughton, Manager, has acquired the property and rights of the Nova Scotian and Mexican Mining Company, and have commenced work upon the completion of the construction and equipping of a Hydro-electric station at Liscomb River, for the purpose of generating power at that place, and taking it to Goldenville and operating their mines. The Company hope to have some of their mines in operation early in 1913.

SHIER'S POINT.

(Moose Head)

Boston and Goldenville Newman H. McDonald....Manager
Gold Mining Company J. H. McDonald..........Foreman

Average number of men employed, 15.

Production.—From 171 tons of ore mined and crushed, 69 ounces of gold were recovered.

Underground.—The 200 feet level on the Hulk vein has been extended east 50 feet and west 50 feet. These levels are now in 260 feet each, and small blocks of ore have been stoped. The north cross-cut from the 200 feet level has been extended 15 feet and is now in 104 feet.

On the Slate belt, where intersected by the south cross-cut, 10 feet of drifting was done. West of the main workings, shafts are being sunk on the Hulk Lead and Slate belt. These shafts are down 50 and 25 feet respectively. The Hulk Lead, where opened in the main workings, averages about 18 inches in width, and it is accompanied by a hulk seam on the foot-wall side which is usually from 5 to 6 inches in width. The strike of the lead is about east and west magnetic, its dip 45° to the south.

In mining the Hulk Lead the hulk seam is first removed with picks and the lead drilled (hand steel) and side-shot. This method resulting in a very low mining cost. The ore is trammed to the shaft in ¾ ton steel cars and hoisted by 1 ton steel skip running on shod wooden rails.

The surface equipment at the mine is as follows:—

At Main Shaft:—Shaft-house containing 1-15 h. p. boiler. One small Jencks hoist.

Blacksmith shop, east shafts on Hulk Vein and slate belts are equipped with horse-operated whins.

Mill building contains:—10-1200 ℔ stamps; 10-700 ℔ stamps; 2-20 h. p. vertical boilers; 1-30 h. p. Truro Foundry engine; 1 Blake-pattern rock-breaker.

Boston And Goldenville Gold Mining Company
East Shaft. Shiers Point.

The 1200 pound stamps were originally part of the equipment at the Ecum Secum Gold Fields Mill at Ecum Secum. They are fitted with automatic feeds and are operated by steam power, and were put in during the year. The 700 pound stamps are those put in in 1911, and are operated by water power.

One Office building.

HALIFAX COUNTY.

FIFTEEN MILE STREAM.

Other than scattered prospecting no work was carried on during the year.

BEAVER DAM

Gladwin Mining Co. E. H. Gladwin........Manager.

This property was operated for a short period only during the earlier part of the year, and 99 tons of ore were crushed, yielding 59 ounces of gold.

The shaft was retimbered and a small amount of development work done and operations discontinued. It is however the intention of the owners to re-open the mine at an early date.

CARIBOU.

Caribou Gold Mines	Harry F. Ross.............Manager
	George Lawlor........Superintendent

Average number of men employed 18.

Production.—From 1366 tons of ore mined and milled 948 ounces of gold were recovered.

Underground.—The Holman Vertical shaft was sunk 46 feet and is now 146 feet deep, the East drift on the Ross Lead was extended east 35 feet and is now in 235 feet, and west 50 feet, now being in 90 feet.

The south cross-cut has been driven 35 feet and is now in 235 feet to what is known as Mascot and Surprise leads. From this south cross-cut the drift, 125 south of shaft has been extended east 90 feet and is now in 115 feet, and a drift on the Mascot and Surprise lead put in east 230 feet. This drift intersecting the Bob Wright Angular 115 feet from cross-cut, and what is termed Number One Angular, at 65-feet raises have been made from No. 1 cross-cut, 70 feet from cross-cut 28 feet to C vein, and from the Mascot and Surprise level, 65 feet east of cross-cut 85 feet on Number One Angular, and from same level 115 feet east of cross-cut 22 feet on Bob Wright Angular.

A Winze has been sunk on the Number One angular from the Mascot and Surprise drift; following the pitch of the angular about (65° east) to a depth of 60 feet.

The ore milled was from the stopes on the Ross lead, Bob Wright angular and contact of Mascot and Surprise lead, and Number One Angular and from ore encountered in drifts.

The raises on both the Bob Wright angular and the Number One angular connect with the old-flat-lead workings above.

In extending the west level on the Ross lead the level was swung to the north and east for the purpose of prospecting some of the known leads in the north dip of the anticlinal fold.

In addition to the operations at the Holman shaft workings considerable prospecting has been done at the western end of the district at what is known as the New Dixon and a prospect shaft is being sunk on the East side of the road, opposite the New Dixon shaft, and this prospect shaft was down at the end of the year 24 feet.

With the exception of general repairs and renewals, no additions have been made to the equipment.

Moose River.

Stillwater Mining Co.	H. W. Hersey,	Manager
	Geo. Murchey,	Superintendent

Average number of men employed, 12.

Production.—From 559 tons of ore mined and crushed 171 ounces of gold were recovered.

While operations were carried on at this mine during the greater part of the year, considerable cross-cutting and underground prospecting was engaged in, which accounts for the small tonnage of ore crushed.

Underground.—The 130 feet level was driven east 54 feet and is now in 144 feet. The west drift was not extended but

Dominion Leasing Company, Shaft-house, Tangier

remains 64 feet. The cross-cut north was extended 78 feet and is now in 92 feet. Opposite the north cross-cut a cross south was driven 108 feet.

The north cross-cut intersected 10 veins, varying in width from ½ inch to 36 inches, and the south cross-cut intersected 7 veins, varying in width from ½ inch to 18 inches. Drifts were started on three of the veins cut but not carried to any length during the year.

The ground above the 130 levels on the Murchey and Johnson vein has been practically all stoped from the roof of the level to the surface.

At the time of my visit the mine was closed down on account of shortage of fuel.

OTHER WORK—MOOSE RIVER.

At the Touquoy property M. J. O'Brien carried on considerable surface and underground prospecting, which did not result, however, in the locating of ore and work was discontinued. When work was discontinued by Mr. O'Brien the property was taken on tribute by Harvey Higgins, Robert Kaulbach, and Forrest Naugler, who commenced work from what is known as the Dowell shaft.

At a point 18 feet north of the 80 feet station in the Dowell shaft, and where a number of angularsin tersected a main lead, these latter tributors recovered some very good ore. Their August and September crushings of 146 tons yielding them 101 ounces of gold. Work is being continued.

Other tributors in the district were James Reynolds on the Kaulbach areas and George Cameron on the Consolidated property and Reynolds property.

This tribute work and the operations of M. J. O'Brien resulted in the recovery of 159 ounces of gold from 455 tons of material crushed.

TANGIER.

Dominion Leasing Co.	A. E. McPhail	Manager
	C. H. McPhail	Foreman

Average number of men employed, 40.

Production.—From 3850 tons of ore mined and crushed 1161 ounces of gold were recovered.

Underground mining was resumed in January 1912, and excepting short delays on account of shortage of water, has been carried on to the close of the year.

The shaft has been sunk from a depth of 510 feet to a depth of 630 feet, a distance of 120 feet and at a depth of 625 feet levels have been broken off east and west. The east level is now in 50 feet and the west level 45 feet.

Stoping has been carried on between the 500 and 340 feet levels, practically all ore above the 500 has been taken out. Preparations are now being made to commence stoping the ore between the 625 and 500 feet levels.

On resuming underground operations, after the fire noted in last year's report the development was neglected on account of scarcity of men and owing to the fact that as the mine had not been producing for several months, it was thought advisable to devote all energies to the recovery of bullion. This resulted in the depletion of the ore reserves, before the lower levels were ready for stoping; and has somewhat lowered the production for the last three or four months of the year, and it will probably be a month or two before the tonnage handled, again reaches normal.

The vein in the lower levels appears to be carrying its size very well, but in the west extension of this level an angular has been met which apparently cuts out much of the values. This effect may be only local, and when the level extension is continued well beyond the angular, it is quite possible that equally good values will be met.

The shaft-house and power-house were completed and machinery placed ready to commence operations in December. The building is much more commodious than the old one and better suited to the requirements.

The new machinery installed was as follows:—

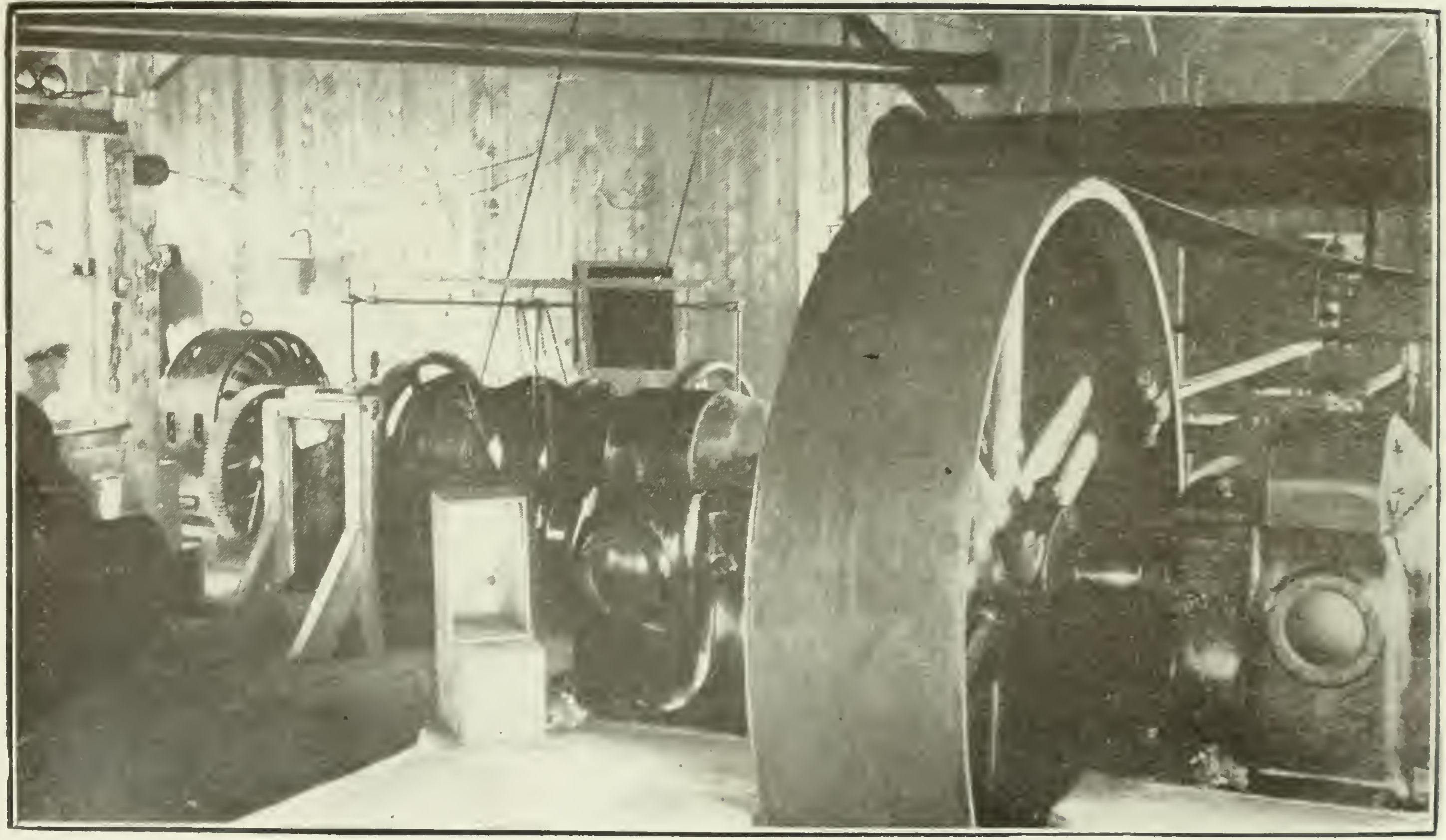
One 200 h. p. Westinghouse electric motor (replacing one destroyed of 150 h. p.)

One Rand 2 stage compressor, belt-driven, capacity 1175 c.f. of air a minute.

One small feed pump, and circuit breakers to all motors.

The hoists and their motors were repaired and are giving satisfaction.

The dam on the Tangier River again gave trouble and necessitated considerable repairs.



Dominion Leasing Company, Interior of Mine Power-house. Tangier.

Underground electric lights were put in at all stations and a Fairbanks Morse 7 by 4 by 7 pump placed at the 360 feet level.

I have to report that a fatal accident occurred at the mine on August 15th resulting in the death of James Cooper. Cooper's duties were to look after the different underground pumps, and he met his death while tending the pump at the 340 feet station. The pump at this station is placed west of the ladderway, which is west of the skip and tub roads. Cooper while tending the pump, had it is thought, crossed the tub road and remained for a time between the tub and skip-way, and in returning, either fell or was knocked by the tub, down the tub-way, as he was found by the manager hanging head down the tub-way, dead, his foot jammed between the slides and timbers, the tub pressed against him. Cooper's duties did not necessitate his crossing the tub-road at this station, and in addition I would not consider the crossing place dangerous. Just how the accident occurred, will remain a mystery, as there was no one with the deceased at the time of the accident. He was dead about half an hour when found.

LAKE CATCHA.

Petpeswick Mining Co.	G. J. Partington	Manager
	Wallace Dukeshire	Foreman
	Austen M. Anderson	Foreman

Average number of men employed, 40.

Production.—From 1572 tons of material crushed 162 ounces of gold were recovered.

Underground.—From the Vertical shaft on the Lake lead, the 200 feet level east was extended 116 feet, making its total length 166 feet, and above this level a small block of ore was stoped, and sent to the crusher. Work on this vein was discontinued in February and the workings allowed to fill.

In January work was resumed on the Coleman vein. The workings were unwatered for a depth of 320 feet and drifts were commenced east and west at a depth of 300 feet. The east drift is now in 247 feet, and the west drift 297 feet. Stoping has been carried on from the east drift. From the west drift 35 feet west of the shaft a cross-cut has been started south on what is known as the 7 feet fault, for the purpose of prospecting the group of veins known to occur south of the Coleman lead. This cross-cut is now in 65 feet, and has so far cut two veins. It is the intention to continue it for, at least, a distance of 300 feet.

The Coleman vein as so far exposed by the last year's work, has been from 3 to 14 inches in width, averaging about 6 inches. In other respects it shows about the same general characteristics as in the other workings.

The new underground equipment acquired has been:—

Four Rand hammer-drills.

One Rand Chipper. This latter is used for cutting hitches.

Surface.—During the summer from 4 to 6 men have been almost constantly employed in surface prospecting, principally to the west and north of the Coleman lead workings on what was formerly the Anderson property.

Other than the usual repairs and renewals, no additions have been made to the surface equipment.

OLDHAM.

W. A. Brennan	W. A. Brennan..........	Manager
	Patrick Mullaley.........	Foreman

Average number of men employed, 4.

Production.—Including ore crushed for tributors 314 tons of ore yielded 127 ounces of gold.

Work on the Sterling Lead, south-east of the main Sterling Lead workings was discontinued in October, 1911, and the Frankfort workings reopened. This was also discontinued in May, 1912, and work commenced upon the sinking of a shaft on the Fish lead a short distance south of the main Sterling Lead works. This shaft at the time of my visit was 80 feet deep. The lead at the bottom measuring two inches, its strike north 48° E.: the work so far done is all of a prospecting nature; hand steel is being used and no new equipment has been acquired.

Tributors.—Alex. Greenough has continued work on the Broussard lead angulars at the western end of the district, and his brother John was worked for a time on the same lead about 500 feet east. Other tributors were Henry Reeves and William McDonald.

LUNENBURG COUNTY.

GOLD RIVER.

Uniac Mines & Power Company.	Robt. C. Stewart......	Manager

Production.—From 36 tons of ore, mined and crushed, 27 ounces of gold were recovered.

Very little work was done at this property during the year and that confined to the portion of the property on the western side of Gold River.

The operators state that it is their intention to improve the water power equipment, increase the amount of power generated and re-open the mines.

QUEENS COUNTY.

FIFTEEN MILE BROOK.

Switzer Mining Co. (Lowe Mine)	E. S. Henley..............	Manager
	Forest Dowell, ...	Foreman

Average number of men employed 20.

Production.—From 225 tons of material crushed 21 ounces of gold were recovered.

This Company commenced operations in May 1912.

Underground.—From the face of the 75 feet level 260 feet east of the West shaft a raise was made to the surface and equipped as a new shaft. This was then sunk 50 feet making a shaft 125 feet deep: sinking is being continued, a level being the continuation of the 75 feet level was driven east 100 feet, and at a depth of 120 feet, levels have been broken off east and west.

Small blocks of ore have been stoped from the east and west sides of the shaft above the 75 feet levels.

Surface.—A shaft-house has been built at the East shaft and slight repairs made to the mill. The new equipment added was 1-15 h. p., hoist at East shaft. One Fairbanks Morse pump, three inch suction, two inch discharge. Two Cameron pumps 2 inch suction, 2½ inch discharge and 2 inch suction and 2 inch discharge, and 1 Northey pump 3½ inch suction 3 inch discharge.

HANTS COUNTY.

RENFREW.

M. J. O'Brien, et al M. R. O'Shaughnessy....Manager
Vincent O'Shaughnessy..Superintendent.

Average number of men employed, 39.

Production.—From 2908 tons of ore mined and crushed 1182 ounces of gold were recovered.

While prospecting has been carried on at the Preeper McLeod East and O'Brien leads. Mining has been confined to the McLeod or Nuggety lead.

Underground.—The 360 feet level has been extended East 13 feet and is now in 196 feet. This level west has been extended 83 feet and is now in 343 feet. The 460 feet level was driven east 163 and west 195 feet, and are now in 231 feet and 243 feet respectively. From the 360 feet level 85 feet west of the shaft, a cross-cut has been driven south 25 feet, and from the 460 feet level 40 feet east of the shaft, a winze has been sunk 58 feet.

Stoping has been carried on above the 360 feet level west and above the 460 feet levels east and west.

The vein as encountered in the new work appears to be holding its size and is, in general, similar to that encountered in the upper workings, excepting that the best values recovered during the year have been from the west workings.

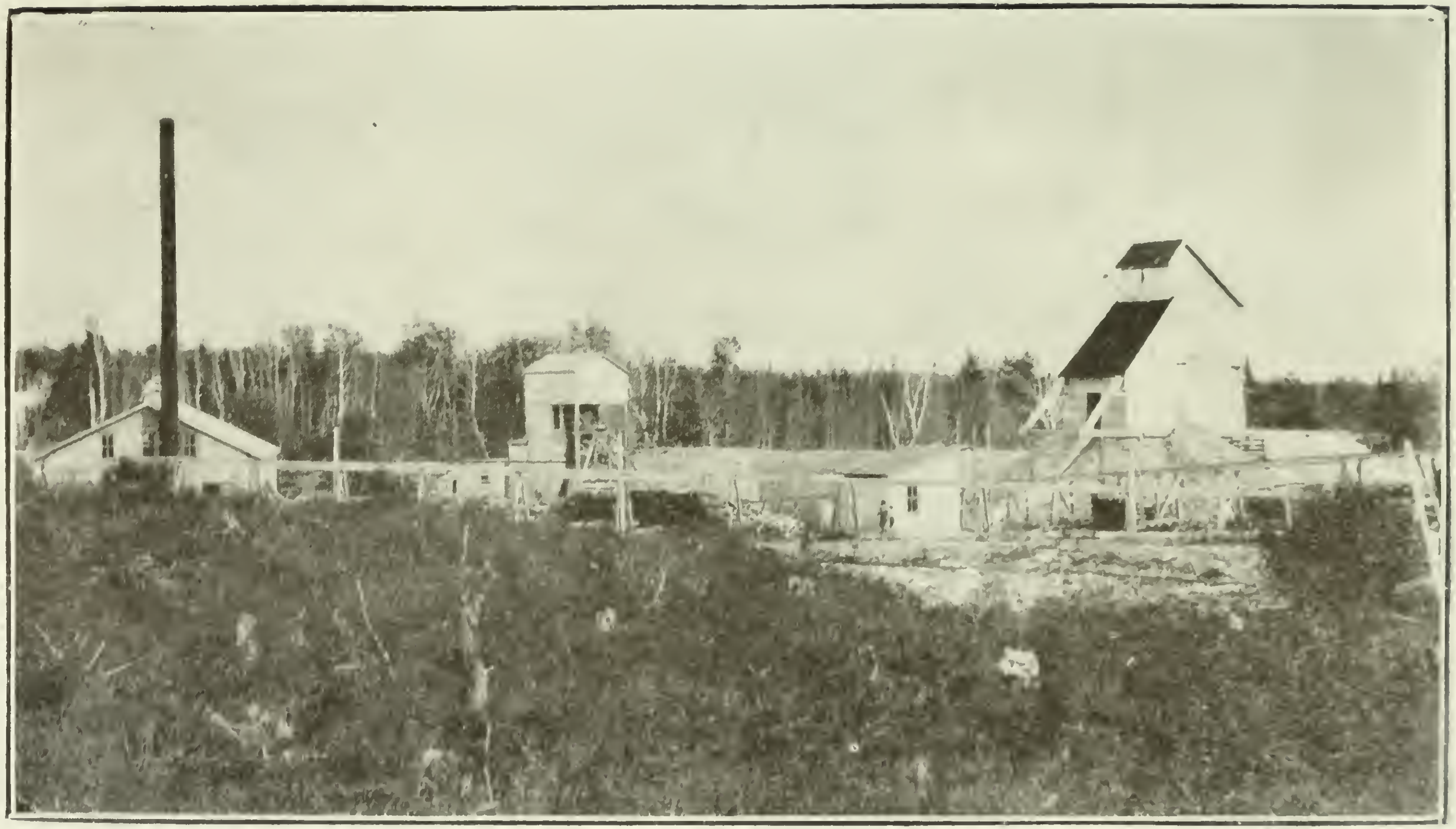
Surface.—General repairs have been made to the mill and other surface equipment and temporary shaft-houses put up at the sites of the prospecting operation, and a small addition built to the shaft-house.

The only new equipment added has been—

One Hardy piston-drill.

One Hardy simplex hammer-drill, and

One Rand hammer drill.



POWER HOUSE INCLINE SHAFT NO. 4 SHAFT

Scheelite Mines Ltd., Looking South.

VICTORIA COUNTY.

MIDDLE RIVER.

Great Bras d'Or Gold Mining Co.	D. Patriquin . . Superintendent

The only work undertaken at this property during the year, was, the driving of an upraise from the working level to the intermediate level, on the vein, west of the fault. The vein encountered on this raise averages about 6 inches in width to within 25 feet of the intermediate level, when it enlarged to 2 feet and showed fair gold values.

This work was completed in the fall of 1911.

OTHER DISTRICTS.

At Montague, T. N. Baker, on the Franklyn property: at Pleasant River Barrens, W. H. Prest on the Awalt property; and at Carleton, Bryon Bower, have operated to a small extent.

Prospecting has been engaged in at a number of the other districts.

TUNGSTEN.

SCHEELITE, MOOSE RIVER.

Scheelite Mines, Limited	A. L. McCallum,	Manager
	L. A. Mylius	Assayer and Surveyor
	O. T. Wren	Foreman

Average number of men employed, 30.

Operations have been carried on continually during the year and in addition to the underground and surface prospecting, small bodies of ore have been stoped and milled. A total of 15 tons of concentrates were made and shipped, much of this ore being that recovered from previous prospecting and development work, of this, 340 tons yielded 8½ tons of concentrates.

Underground.—The total length of drifts and cross-cuts at the end of the year was 2,570 feet, the total upraising 466 feet.

The shafts sunk to date, are as follows:—

No. 1, on No. 1 vein, 38 feet, incline 70 degrees to north.

No. 2, on No. 3 vein, 110 feet, vertical.

No. 3, Incline vein 25 feet, vertical.

No. 4 on No. 4 vein, to 110 feet level, 190 feet, incline 70 degrees to south

No. 5, old prospect, depth not known.

No. 6, on No. 1 vein north, 32 feet, incline 45 degrees north.

No. 7, on No. 3 vein, 56 feet, incline 85 degrees south.

No. 8, on No. 3 vein, 65 feet, incline 85 degrees south.

No. 9, on No. 1 vein, 35 feet vertical.

No. 10 on No. 1 vein, 15 feet incline, 70 degrees north.

No. 11 on Prospect, 20 feet, vertical.

No. 12, on Incline vein, 47 feet, vertical.

No. 13, on No. 1 vein, 15 feet incline, 70 degrees north.

No. 14, Raise converted into shaft, vertical.

No. 15, No. 7 vein, south, 70 feet, incline 70 degrees south.

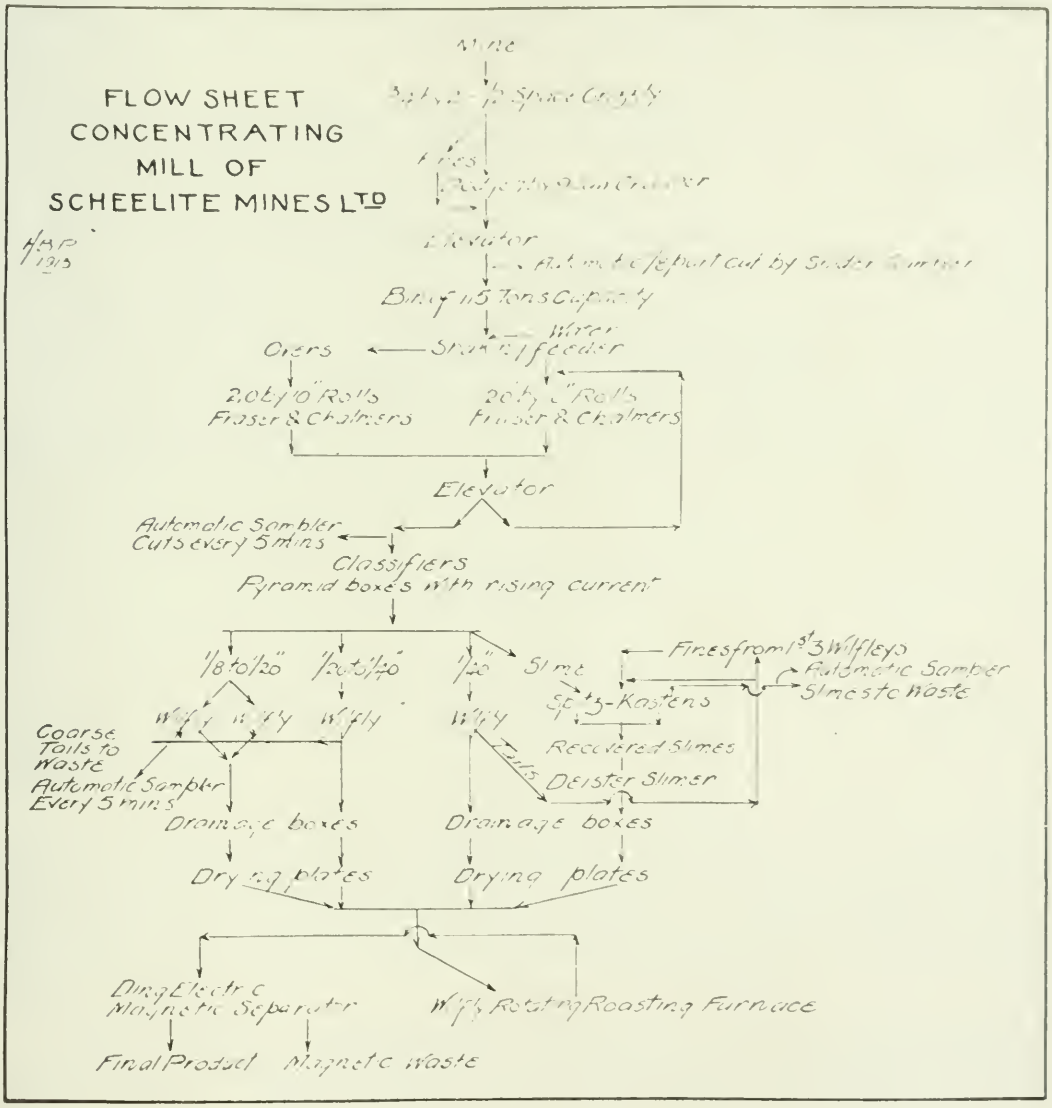
Shaft No. 15 as well as No. 14 was originally a raise from the incline shaft. The incline shaft has been extended, and is now down 480 feet measured on the incline.

Shaft No. 4, now 190 feet deep was originally 40 feet deep, and was to the 100 feet, cross-cut south from the incline shaft. At a depth of 190 feet levels and cross-cuts have been driven to prospect that section south of the incline shaft.

Stoping had been carried on from No. 3 vein workings between No. 2 and No. 7 shafts, and west of the brook fault, between it and what is known as the little fault, on No. 1 vein workings west of the little fault and from the 77 feet level.

A detailed statement of the drifting and cross-cutting done during the year, on account of the different localities would only be confusing, and is therefore omitted. It can be readily ascertained by referring to the plan of the underground workings on file in the office.

The ore stoped cannot be said to have been satisfactory. It being found that the lenzes of ore did not extend and carry their size in the upper stopes as expected, and further the level extensions on the different veins, which at times encountering good ore, did not open as good territory as the level extensions of 1911.


FLOW SHEET
CONCENTRATING
MILL OF
SCHEELITE MINES LTD
HBP
1913
Mine
Space Grizzly
Fines
Crusher
Elevator
Automatic Sample cut by Snyder Sampler
Bin of 115 Tons Capacity
Water
Overs
Shaking feeder
20 by 10" Rolls
Fraser & Chalmers
20 by " Rolls
Fraser & Chalmers
Elevator
Automatic Sampler
Cuts every 5 mins
Classifiers
Pyramid boxes with rising current
1/8 to 1/20"
1/20 to 1/40"
1/40"
Slime
Fines from 1st 3 Wilfleys
Automatic Samper
Slimes to Waste
Spitz-Kastens
Wilfly
Wilfly
Wilfly
Wilfly
Coarse
Tails to
Waste
Automatic Sampler
Every 5 mins
Tails
Recovered Slimes
Deister Slimer
Drainage boxes
Drainage boxes
Drying plates
Drying plates
Ding Electric
Magnetic Separator
Wilfly Rotating Roasting Furnace
Final Product
Magnetic Waste

No. 4 shaft levels and cross-cuts at 190 feet had not been extended sufficiently at the time of my visit to indicate what character of ore might be encountered.

Surface.—The mill was completed early in the year and has been operated with success, producing a high grade concentrate, the treating of the ore is a most interesting one, and the mill unique in Canada. The flow-sheet of the mill published herewith shows the mill practice, continual assays are made on the ore at different stages, and on the final products and tails. These show the recovery to be high and the loss in tails and slime to be very low.

Additions to surface equipment were:—

Shaft-house at No. 4 shaft.

New powder magazine.

Assay office.

One Truro 7 by 10 single drum friction hoist.

In addition to the underground work, surface prospecting has been engaged in.

MANGANESE.

NEW ROSS.

The Nova Scotia Manganese Co.	W. J. Prisk..............Manager

An average of 45 men have been employed. While a small amount of work has been performed below ground, the principal efforts of this Company have been directed to the building of a road from the mine to Benjamin's Mills, and the completion of their mill.

Underground.—No sinking was done, the shaft remaining 155 feet deep. The levels at the bottom were extended east 90 feet, and west 50 feet. These levels now being in 115 and 205 feet respectively. From the west level 65 feet west of the shaft a raise of 15 feet has been made, 105 feet from the shaft a raise of 10 feet has been made and 190 feet from the shaft a raise of 20 feet has been made. These were made for the purpose of preparing to stope ore from these sections of the mine.

The ore showings in the new work have been as regards quantity and quality, very satisfactory, particularly so in the east level. In the face of the west level the dip of the vein is much flatter than in the other sections of the mine, it dipping here at an angle of 45 degrees to the south.

In the east level a run has made it necessary to go into the hanging wall in continuing the level, the section affected being the last 15 feet of the level.

The timbering of the levels is being done with 8 by 8 inch square posts and caps, 4 by 8 sills and 3 inch lagging, all hard wood.

It is the intention to put down a new working-shaft when the development work has been sufficiently advanced to indicate the proper location.

Surface.—The mill building commenced last year has been completed and one additional shaking screen put in. One jack-head pump is the only new mine equipment installed.

Very little ore has so far been milled and the wet section o the mill equipment has not yet been acquired. The mill practice as now in vogue is shown by the accompanying flow-sheet.

On the construction of the road two parties have been almost continually employed, one party working from the mine and the other from the Benjamin's Mill end, to date 3¼ miles on the west end and 2 ¾ miles on the east end have been completed. The construction of the greater part of the intervening 3½ miles has been sufficiently advanced to allow of its use as a good winter-road. It is not the intention to complete the road this winter.

Much difficulty has been found in keeping men on account of the isolated location of the property, and lack of adequate boarding facilities. This difficulty will be greatly overcome when the road is completed.

BARYTES.

SCOTSVILLE, EAST LAKE AINSLIE.

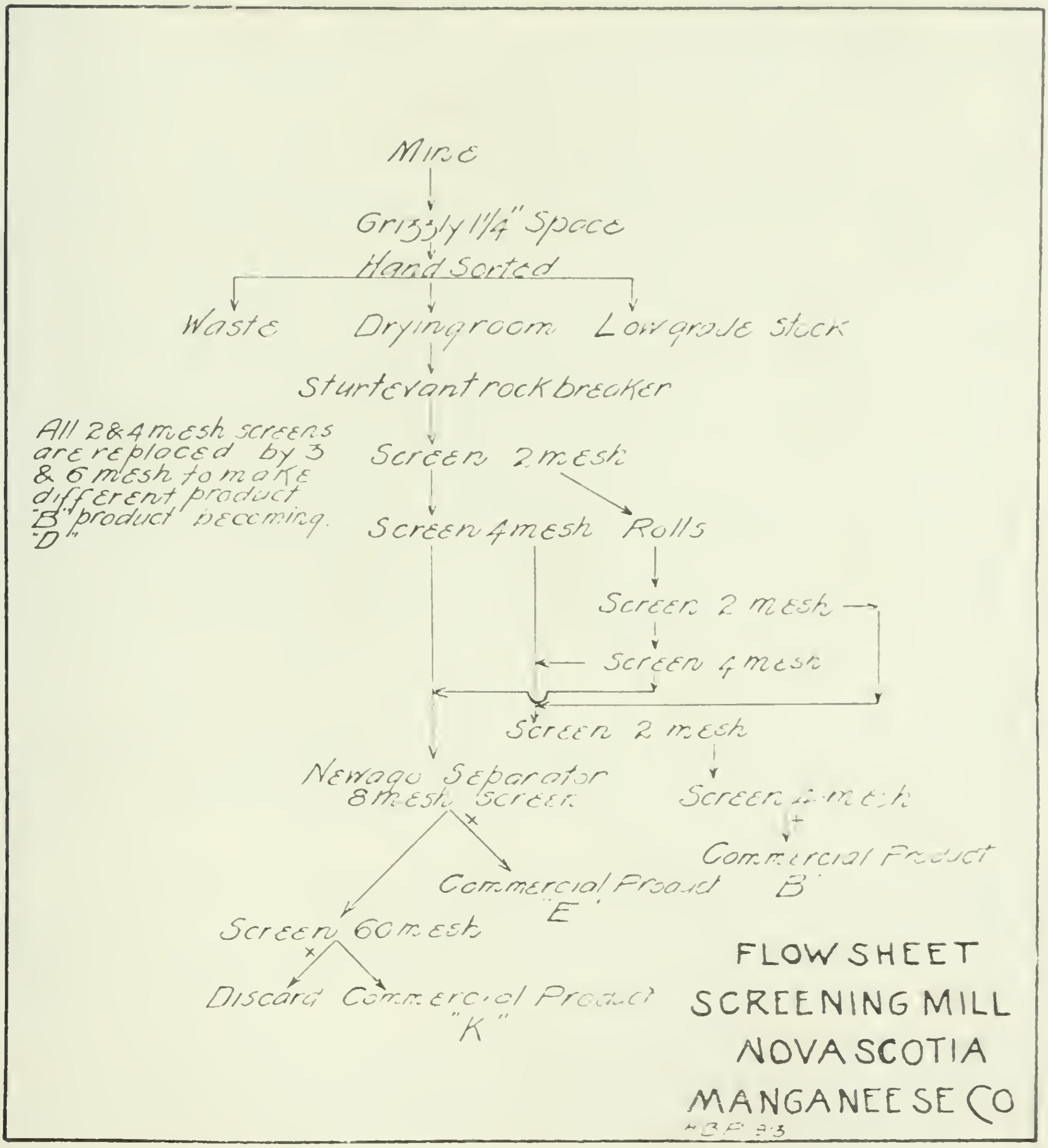
Barytes, Ltd. H. H. Harrison, ...Manager

Average number of men employed 18.

Mining and milling of Barytes has been engaged in by this Company during the greater part of the year.

The mines of this Company are located at Scotsville, and at East Lake Ainslie; and it is the former mine that has lately been operated.

The shaft sunk on the vein, (6 to 12 feet in width) dipping to the east at an angle of about 20 degrees, is 110 feet deep.



FLOW SHEET
SCREENING MILL
NOVA SCOTIA
MANGANEESE CO

Levels have been put in north and south at 50 and 100 feet. The 50 feet levels are in 100 feet north and 100 feet south. The 100 feet levels have just been broken off.

Underground wooden cars are used, running on 12 pound rails. The ore is hoisted in two wooden skips operated in balance and trammed from shaft head to ore pocket of about 30 tons capacity, distant from the shaft about 3000 feet. From the pocket, the ore is hauled to mill.

The mill building is 115 feet long, 52 feet wide, two storeys. The milling of the ore is as follows:—

The ore first passes through a small Blake crusher set to one inch, then by gravity through a rotary grinder reducing to about 4 mesh. It is then elevated to a 16 feet log washer, after which it is delivered to lead-lined tanks, (four in number) 12 feet in diameter 3 feet deep, where it is subjected to treatment with diluted sulphuric acid removing the 3 to 4 per cent of lime, iron, manganese, the quantity of acid used is about 6 per cent, by weight of ore treated. The time of acid treatment is from three to four hours, after which the ore is thoroughly washed and trasferred to steam heated drying-floors. From here it is elevated and passed through four sets of buhr-stones 48 inches in diameter, top runners set in heavy wood husks, and arranged in batteries of four driven by gears from a single shaft. The ore is conveyed from set to set through battery by a system of elevators and screw conveyors.

The commercial product is barreled (about 750 ℔ weight) and shipped by steam-powered vessel of about 30 tons burden, to Strathlorne Station on Inverness Railway, a distance from the mill of about 7 miles.

A high grade product is produced, said to be the best grade yet produced in Canada, assay made showing 99% Barium Sul phate. The product is being taken by Canadian and American paint manufacturers.

The mill which at present has a capacity of one ton an hour is to be doubled, and a subsidiary plant is proposed to produce precipitated Barium, Barium Carbonate, Barium oxids, etc.

Your obedient servant,

H. B. PICKINGS,

Deputy Inspector of Mines.

QUARRIES.

Mr. Hiram Donkin, C. E.,

Deputy Commissioner of Public Works and Mines and Inspector of Mines, Halifax, N. S.

Dear Sir:—

I beg leave to report to you, on the quarries operated in Nova Scotia, in the fiscal year ended September 30th, 1912.

The information in the report is from inspection and from official records.

The quarries are all in good condition, worked systematically and with due regard to safety. There are about 1400 men employed, not regularly. The output for the year was, gypsum 280,000 tons: building stone 10,690 tons: limestone 473,067 tons: grindstone 400 tons: granite 954 tons.

One fatal accident was reported in the year: Rueben B. Smith, age 50 years, was killed at the Wentworth Gypsum Company's quarry near Windsor. He was caught under a dump car while oiling it. A verdict of accidental death was given by the jury of inquest.

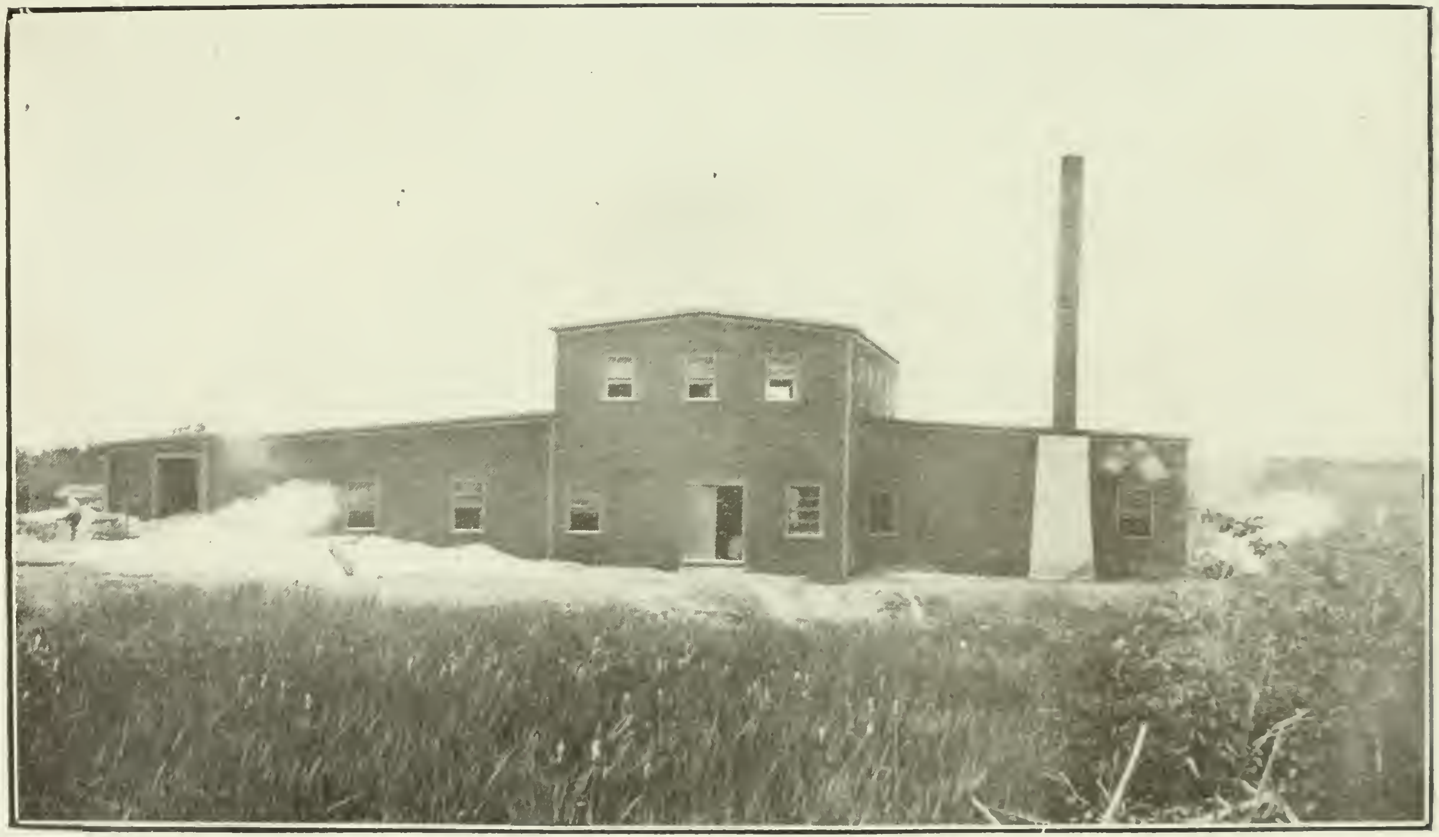
Copies of the Act relating to quarries, and the necessary forms for making returns have been sent to all operators in the province; but it is difficult to get prompt returns.

The principal material quarried is Gypsum (sulphate of lime).

Nova Scotia is rich in this mineral, generally of pure quality.

A glance at the geological map, readily shows that the caboniferous System in Nova Scotia, lies in the counties of Cumberland, Colchester, Hants, Pictou, Antigonish, Inverness, Victoria, Cape Breton, and Richmond. The carboniferous series is the home of the gypsiferous deposits, and these counties contain immense deposits of gypsum.

In the territory lying between Minudie and Pugwash, there are large deposits, especially at Nappan River, and at Pugwash. In Hants County, it is quarried near Windsor, in the outcrop of an immense vein. It is quarried at Newport, Cheverie, Walton, and Noel, in the same county. In Pictou it is found in workable quantities on the East River. In Antigonish it is exposed, in one place on the coast, for a height of 200 feet. The bed of gypsum from which Plaster Cove, now Port Hastings, took its name, is of enormous thickness, two-thirds of which is anhydrite or hard gypsum.



Barytes Limited. New Mill, Scotsville.

Near the mouth of Mabou River, there is another immense deposit: a peculiarity about the gypsum in this vicinity is, that it crops alongside the coal, both being in the Lower Carboniferous. It appears again at Cheticamp, and is quarried and manufactured at Eastern Harbor, by the Great Northern Mining and Railway Company.

It lies in many places along the Margaree River, and at Lake Ainslie It abounds at Big Harbor on the Bras d'Or Lake, and at St. Ann's, where the Victoria Gypsum, Mining and Manufacturing Company, is working a large quarry. Another deposit is being worked in Victoria County, at Ottawa Brook, near the Intercolonial Railway.

At Lennox Passage, Isle Madame, in Richmond County, there is a large bed of excellent quality. In Cape Breton County there are large deposits, but they have not been worked to any great extent.

The surfaces of all these beds of gypsum are marked by inverted cone-shaped cavities, known as plaster pits or kettle holes. In some deposits they are not exposed, save the tops, and gypsum may be traced by these, where there is no outcrop. These cavities are formed, some geologists say, by the solvent action of surface water penetrating the fissures of the gypsum. Other authorities contend that kettle holes are formed by escaping gases. The cavities are more contracted in the anhydrite.

Gypsum is divided, in a general way into two classes, *soft* and *anhydrous*. The latter is gypsum destitute of the combined moisture which gives it its usefulness for modeling and plastering and is known to the quarrymen as "hard rock." It can not be bored with the same augers as the "soft rock" which is almost chemically pure, and which is broken with picks, with little waste; while the anhydrite is broken with heavy hammers. There is no market for the hard rock. It would make a good base for paved streets, and might be a useful substitute for marble for indoor decoration.

Gypsum when calcined becomes plaster of Paris. The transparent varieties are known as selenite. When heated to 250 degrees Fah., it loses its water of combination and becomes anhydrite.

The increase in the production of gypsum is about proportional to the increase in the manufacture of cement: this and the slow increase in the building trades and other purposes for which white gypsum is used, regulate the production. The quantity is, easily, far in excess of the demand for many years to come. The grey and blue varieties, are used for cement and for agriculture, and are available for many years.

The output of gypsum in Canada in 1911 was 505,457 tons, valued at $978,863; half of which was produced in this province.

The following is an analysis of gypsum quarried at Eastern Harbor, Inverness County:—

Insoluble residue	.30	per cent
Oxide of iron and Alumina	.10	" "
Calcium sulphate	90.49	" "
Calcium carbonate	2.01	" "
Magnesium Carbonate	.76	" "
Moisture	5.70	" "
Undetermined	.64	" "
	100.	

An analysis of Hants County gypsum shows the following:—

Lime	32.62
Magnesia	tr.
Ferric oxide and alumina	.86
Suplhuric Anhydrite	46.08
Water, loss on ignition	20.30
Insoluble mineral matter	.14
Carbonic anhydride	tr.
	100.

Building stone is quarried near Pictou, and at Amherst and Wallace, Grindstones are quarried on the west side of Merigomish Harbour. Limestone is quarried at Ball's Creek, and at Leitche's Creek in Cape Breton County. Dolomite at George's River, Cape Breton County. Marble and limestone at Marble Mountain, Inverness County. The output of limestone, dolomite, and marble, is used in the furnaces of the steel works at Sydney and Sydney Mines.

GYPSUM.

St. Ann's.

Quarry at St. Ann's, Victoria County, owned and operated by the Victoria Gypsum Mining and Manufacturing Company. The quarry is under the superintendence of Mr. W. Clarence Lodge.

The property consists of 200 acres held in fee simple; and is estimated to contain about two million tons. The material is good to a depth of 80 feet. The overburden is light, and is removed by pick-and-shovel. The present face is about 80 feet high. The first work was done here by the present company, about ten years ago. Work continues all the year, and the production averages 90 tons a day, with a loss of about 4 per cent in handling.

The production for the year was 26,362 tons. There were on hand, September 30th, 4500 tons.

The force for last year was 113 men, who are insured in the Ocean Accident & Guarantee Corporation. There are on the property 20 dwellings, 20 shacks, a stable with 15 horses, a hall, which is used for lectures and for religious services, and a house for the superintendent. There is a good water supply at the quarry.

The gypsum is shipped from the Company's wharf at Munroe's Point, three and a half miles away, to Chester, Pa. The product is hauled to the pier by locomotives.

The nearest railway station is North Sydney, 30 miles away.

OTTAWA BROOK.

Quarry at Ottawa Brook, Victoria County, near the Intercolonial Railway about eight miles west of Grand Narrows. Mr. John Y. Gillis is superintendent.

The property contains 50 square miles, held under lease and is operated by the Newark Plaster Company of Newark, New Jersey.

The material quarried is gypsum of good quality, which improves with depth. The overburden is about 15 feet; it is removed by falls, and is carted away. The out-put is 40 tons a day, produced by hand. The loss in handling is about 5 per cent. About 1500 tons were shipped last year and 1500 tons were on hand October 1st.

The average force is a 25 men, uninsured.

The material is shipped from the Company's wharf, 130 feet long, a mile from the quarry. The road is narrow gauge, 40 ℔ rails, and under-crosses the Intercolonial. The cars hold 2½ tons, are hauled by locomotives and emptied into the vessels from automatic tipples. The entire product is shipped to Newark, New Jersey.

The first work was done here by the present Company in December 1907.

The Company purpose, during the winter, to strengthen the pier with concrete piles, as the worms are very destructive on wooden piers.

The nearest railway station is McKinnon's Harbor, three miles distant. There is a poor water supply at the quarry, but good water can be easily brought to the premises.

I noticed some men working alongside of an overhang in the wall, I called the attention of the foreman to this. He said it was not the usual practice, and that the men would be removed.

BELLE MARCHE.

Quarry at Belle Marche, Eastern Harbor, Inverness County, operated by the Great Northern Mining and Railway Company, incorporated, February 1907; capital, two million dollars. Hubert AuCoin is Manager. The works are 40 miles from Inverness Station, the terminus of the Inverness and Richmond Railway. The property comprises three square miles held under lease, and is estimated to contain 25 million tons of gypsum.

The quarry shows a face 125 feet high, with practically no overburden. The loss in quarrying is about three per cent. There were 8000 tons produced in the year ended September 30th, 1912, and there are about 2000 tons on hand. The work is done by hand, steam, and electricity. There is an average of 50 men employed and work could be continued all the year, if there were railway connection to Inverness.

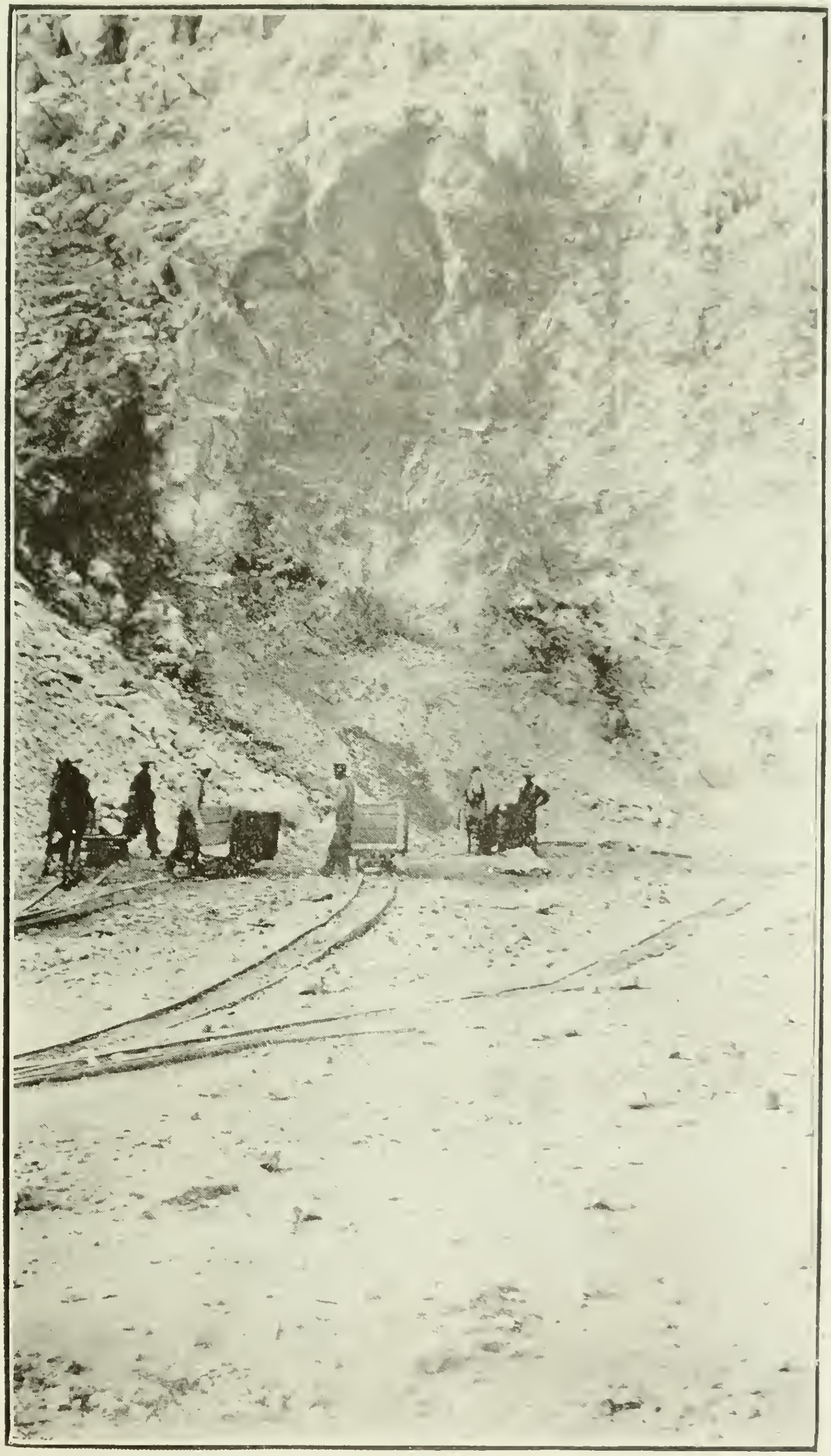
The product is shipped, at Eastern Harbor, to Montreal and Quebec. There is a standard gauge railway, three miles, from the quarry to the shipping pier. A 70 ton locomotive does the hauling to the pier. All the gypsum produced is manufactured at the quarry.

A new warehouse 160 by 75 feet, capable to hold 4000 tons, has been built. There have been erected two new Weygo separators. The quarry gives from 95 to 97 per cent milling rock. The gypsum is taken from quarry to mill by gravity cars, and the empties are hauled back to the quarry by horses.

About 5000 tons of finished plaster have been shipped this year and about 3000 tons more will be shipped before the close of navigation. The capacity of the plant is from 50 to 60 tons a day.

The plant consists of 2 boilers 75 h. p., each: crusher, roaster, grinding stones, calcining kettle, elevator, mixer: 1-125 k. w. dynamo and 1 Robb engine.

There is a good water supply at the quarry. The first work was done here by this Company in 1906.



Great Northern Mining Company. Chitecamp.
Showing Working face of Quarry.

NAPPAN.

Quarry at Nappan, Cumberland County, owned and operated by the Maritime Gypsum Company. Mr. Arthur T. Avard is superintendent.

The works are about one and a half miles to the eastward of Nappan Station. The property consists of about 14 acres, and is estimated to contain about 3 million tons of gypsum. It is wrought by Machine drills, and a Lidgerwood electric cableway, erected in 1909, which hoists and conveys one and three quarters of a ton at a time. The output for the year is 24,533 tons.

The quality of the gypsum remains nearly the same all through the bed. The overburden averages nine feet and is removed by hand. The face is about 75 feet high and work is carried on below the water level. About 3 per cent is lost in handling. Drill holes, 100 feet, show all gypsum. There are 60 men employed who work all the year. The men are insured in the Ocean Accident & Guarantee Corporation.

The product is shipped from the Company's pier at Amherst Point, two and a half miles from the quarry. The works are connected by a branch with the Intercolonial Railway.

The water supply at the quarry is not good. The first work was done here by the present company, eight years ago.

All the product is shipped to New York.

NOEL.

Quarry near Noel, Hants County, owned and operated by the Noel Plaster Company, Mr. W. B. O'Brien, manager.

The property contains 100 acres, about 35 of which holds gypsum of excellent quality. The overburden is practically nothing. The face being about 35 feet high.

Fifteen hundred tons have been quarried and are stored at the wharf, at Noel Harbour 2 miles distant, ready for shipment to New York.

The quarry is wrought by hand; and the gypsum is hauled by horses, in the ordinary carts, to the wharf. The loss in handling is about 5 per cent.

A line of railway, which can be easily located, is proposed. This when constructed will lessen the cost of production, and make this one of the best properties for cheap development.

There are about 16 men employed for six months in the year. Work was stopped last year in June, and nothing has been done since.

The water supply, at the quarry is not good. The first work was done here by the present Company in 1906.

The nearest railway station is Kennetcook, six miles distant on the Dominion Atlantic Railway.

WALTON.

Quarry at Walton, Hants County, near the main road to Scotch Village Station, on the Dominion Atlantic Railway. It is operated by Mr. A. E. Parsons, M. P. P., under lease from the Churchill estate.

The daily output is about 150 tons, the total output for the year was 22,500 tons: all work done by hand.

The average force is 35 men, employed regularly. The gypsum increases in hardness with the depth: about 2 per cent is lost in handling. The over burden is light and is removed by hand.

The product is hauled by horses and carts to Walton Harbor, one and a quarter miles, where it is shipped to New York.

There is a sufficient grade from the quarry to the shipping-pier to run a self acting incline, which, to an observer, would appear to be a much cheaper method of shipping than the present one.

There are about 28,000 tons of gypsum on hand. There is a good water supply at the quarry.

The nearest railway station is Scotch Village on the Dominion Atlantic Railway.

CHEVERIE.

Quarry at Cheverie, Hants County, about five and a half miles north east from Somerville, and eleven miles from Walton. The property is leased from the Churchill estate by Mr. A. E. Parsons, M. P. P. Mr. Mortimer Parsons is manager. The quarry is reached by boat from Windsor, or by main road from Walton. The nearest railway Station is Brooklyn, 18 miles distant, on the Dominion Atlantic Railway. The production was about 24,000 tons, last year, all of which was shipped to the United States. The quarry is worked all year, with an average of 35 men. All work is done by hand. The overburden is from three to ten feet, and the loss in handling is about 2 per cent.

The gypsum is shipped at Cheverie and is hauled by horses to the wharf, one and a quarter miles.

WINDSOR.

Quarry five miles from Windsor, Hants County, owned and operated by the Wentworth Gypsum Co., Mr. E. Norman Dimock, manager.

The property consists of five square miles. The gypsum vein is 35 feet thick with about 25 feet of overburden, which is stripped by steam-shovel. The quarry is hand-worked. The material is about the same quality all through the bed. Owing to the heavy overburden, the loss in handling is about 15 per cent.

The production for the year ended September 30th, 1912, was 90,819 tons, with an average of 88 men employed. The work is carried on all the year; and the product is shipped to New York from Wentworth Creek, two miles from the quarry. There is a good water supply at the works. The first work was done here by this Company about 37 years ago.

One man was killed at this quarry in February last: he was caught under a dump-cart while in the act of oiling it.

WINDSOR.

Quarry, about five miles from Windsor, Hants County, by highway, owned and operated by the Windsor Gypsum Co., Mr. Thomas A. Mosher, manager.

The property contains 180 acres. This quarry is in the same vein of gypsum as the Wentworth quarry; but the overburden is much thinner, being about 12 feet, which is removed by hand.

The most of the product is shipped at Windsor to New York. The Dominion Atlantic Railway takes the gypsum from the quarry by a spur to the main line, and delivers it at the Windsor waterfront.

There is about five percent lost in handling. The product this year is about 23,000 tons, 5500 tons of which were sold to the Windsor Plaster Company.

There are about 2500 tons on hand. The force averages 35 men, who are paid fortnightly.

The first work was done here by this Company about 21 years ago.

There is a good supply of water one mile from the quarry.

AVONDALE.

Quarry three miles from Avondale toward Miller's Creek. It is reached by rail from Avondale, and by main road from Windsor, 14 miles.

The property consists of 300 acres, owned and operated by the Newport Plaster, Mining and Manufacturing Company, J. B. King & Co., New York, are the principal owners. They have been working this quarry four years. The overburden is stripped by steam shovel. There are 120 men employed. The quarry is worked all year. The gypsum is mined by hand, and improves with depth. About five per cent is lost in handling.

The product is shipped at Avondale, which is said to be the best shipping point on the Avon River. The pier is 900 feet long, and at high water the material is loaded by elevator. There are three locomotives, 75 five-ton cars, and three and a half miles, of narrow-gauge railway.

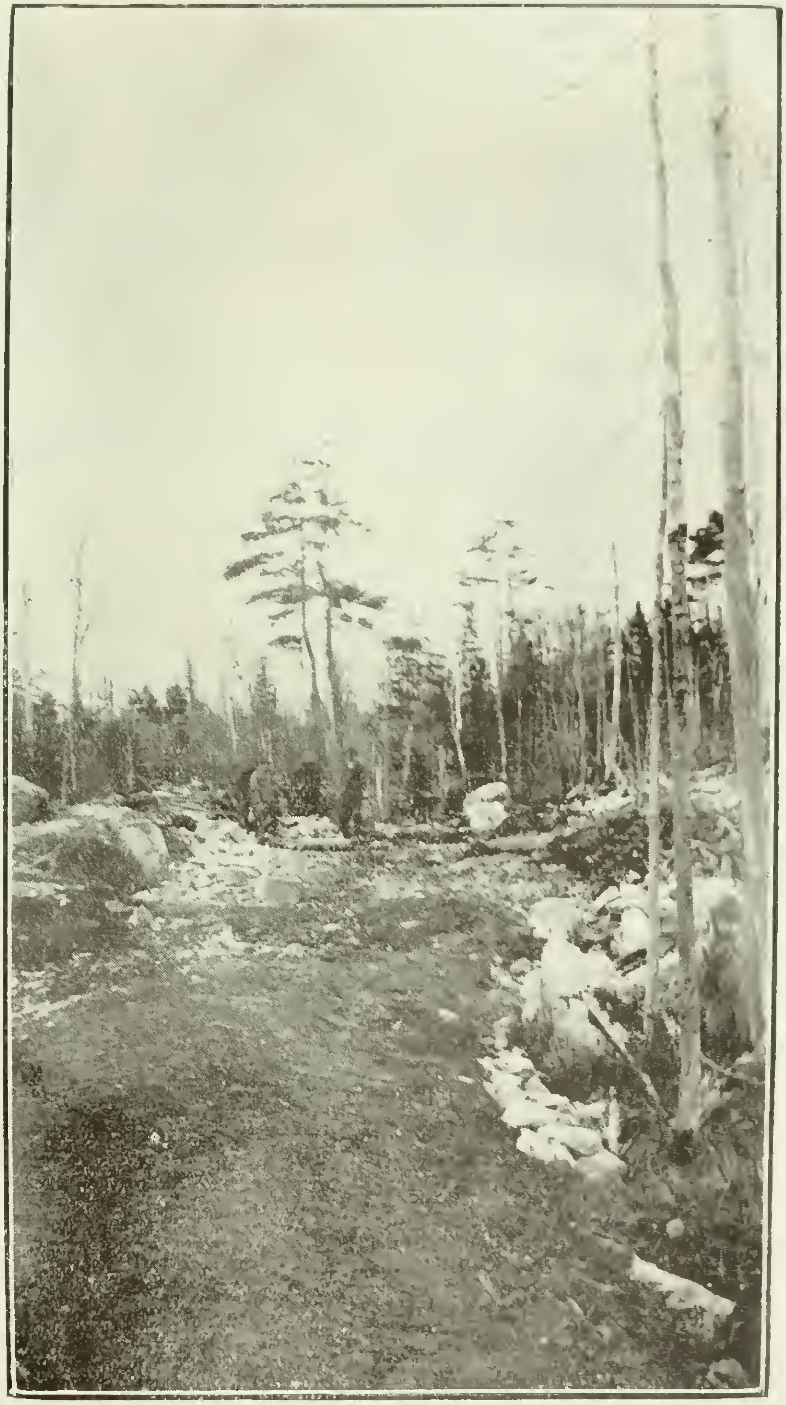
The quarry is being extended rapidly, and a tunnel was driven last year to regain the old quarry, a large deposit, to the south. Next year this Company expect a larger output. About 55,000 tons were quarried last year, and about 46,000 tons crude gypsum, were shipped to New York City.

To the eastward of this quarry, are the old quarries at Miller's Creek, which have not been worked for many years, but which are likely to be re-opened by this Company.

LIME-STONE.

POINT EDWARD.

Quarry at Point Edward, Cape Breton County, owned and operated by the Nova Scotia Steel and Coal Company, Mr. F. J. Cameron, manager. The property consists of 200 acres. The out-put is from 300 to 350 tons a day, and is gotten by steam drills and dynamite. The over-



Nova Scotia Manganese Company
Showing new Road Under Construction.

burden is from 10 to 12 feet and is removed by steam shovel. The nearest railway station is Leitche's Creek, four miles distant, on the Intercolonial Railway. The material is hauled to the main line on a spur to the quarry, two and a half miles.

The loss in handling the product is about two per cent. There are about 75 men employed and work is carried on all the year. The plant cost about 10,000 dollars. There is enough stone in the property at the present rate of extraction, for 40 years. The work is all done by steam. There is about 35,000 tons stripped. The product is shipped to Nova Scotia Steel and Coal Company; Dominion Tar and Chemical Company; and to Londonderry, N. S. There are on the ground, crusher and screener, one return tubular-boiler, and one Lidgerwood engine.

The first work was done in this quarry by the present owners in 1902. There is a good water supply at the quarry.

BALL'S CREEK,

Quarry at Ball's Creek, Cape Breton County, owned and operated by the Dominion Iron and Steel Company. Mr. John S. Nairn, manager. The nearest railway connection is Ball's Siding to which the stone is taken by a spur one and a quarter miles. The nearest shipping port is North Sydney, 9 miles north.

The property contains about 50 acres. The stone carries from ½ per cent to 3½ per cent silica. The overburden is from three inches to four feet and is removed by pick-and-shovel. The output is from 100 to 250 tons of lime-stone and about 60 tons of material used for pier-ballast, for Dominion Coal Company. The stone is best at the surface, the face averages 15 feet. About four per cent is lost in handling. There are about 25,000 tons in sight. The work is done by steam. Sullivan drills are used. The boiler furnishes 60 h. p. The stone is broken by hammers for use in the furnaces of the Company at Sydney. There is an average of about 70 men employed, they are members of the Benefit Society, known as the Ball's Creek Branch.

There is a good water supply at the quarry. About 2000 lineal feet of timber are used annually.

DOLOMITE.

GEORGE'S RIVER.

Quarry at George's River, Cape Breton. Owned and operated by the Dominion Iron and Steel Company. Mr. William Routledge manager. It is two miles from North Sydney Junction, and seven miles from North Sydney: from tide water Bras d'Or Lake, two miles.

The property consists of 200 acres. There is a branch line of railway two miles long, to the Intercolonial Railway.

The dolomite contains about 3 per cent, silica. There are about 200 tons a day quarried, 90 tons of which is dolomite; the discarded stone is shipped to the Dominion Iron and Steel Company, and The Dominion Coal Company for concrete purposes. About two per cent is lost in handling.

The work is done by steam drills and dynamite. One boiler 40 h. p. produces the power. The face is worked in three levels, about 200 feet apart. There is a good water supply. on the premises. An average of 65 men is employed the whole year. This quarry was started in 1899.

MARBLE AND LIMESTONE.

Quarry at Marble Mountain, West Bay, Inverness Co., owned and operated by the Dominion Iron and Steel Company, Sydney N. S.

The materials quarried are marble and limestone, all of which is shipped to the Steel plant at Sydney.

The method of working is open-face, stepped. The material is blown by dynamite. A new cutting has been opened to No. 1 level No. 2 and No. 3 levels are stopped for the present, and there are two new cuttings started on No. 4 level.

The production this year, is the largest since the quarry was started. There were 500 men employed during the summer.

The buildings are, office 16 by 42 feet: warehouse 27 by 35 feet: carpenter-shop 16 by 24 feet: machine shop 12 by 24 feet; engine room 24 by 52 feet: repair shop 20 by 30 feet: forge 30 by 40 feet: stable 35 by 40 feet: boiler house 30 by 80 feet.

The plant consists of six Mumford boilers of 800 h. p.: one Armington-Sims engine 18 by 18.5 inches, 250 h. p.: one Matheson engine 12 by 12 inches, 80 h. p., side-crank: one 85 h. p. generator:

Nova Scotia Manganese Company Showing new Road under Construction.

three 30 h. p. motors: two Rand compressors, capacity 2000 cubic feet a minute: eight Sullivan drills: fourteen little Jap hammer drills: one Cameron pump, capacity 200 gallons a minute: one Northey pump, capacity 150 gallons a minute: one Cameron pump capacity 200 gallons a minute, placed last year.

The fire fighting apparatus consists of two reels and 1000 feet of 2½ inch hose: five 2½ inch hydrants.

Five tons of dynamite were used last year. Batteries and fuse are used in shot firing.

About 20 tons of 60 lb rails are used annually.

Officers.

A. H. Campbell, resident manager.

J. H. McDougall, general foreman.

Kenneth Walsh, master mechanic.

The out-put for year ended September 30th, last, was 330. 235 tons, and shipped to the plant at Sydney 432,559 tons.

FREESTONE.

WEST MERIGOMISH.

Quarry, on Quarry Island, Woodburn District, Pictou County. Owned and operated by Mr. James W. Sutherland. Mr. James Stevenson is manager. It is a grindstone factory.

The quarry is reached by water, about ¾ mile from West Merigomish Station. Intercolonial Railway. The property contains about 40 acres. There is about 30 feet of surface which is removed by derrick, horses and carts. The quarry is worked by steam drills, power is produced by a 40 h. p. boiler. The stone is about the same throughout. The face is 75 feet long and 15 feet deep..

The loss in handling and turning the material into grindstones, is about 75 per cent. The product for the year is approximately 400 tons, finished.

The stones are sent to the United States, save about 3 per cent sold in local market.

There are about 110 tons on hand to finish. The material is practically inexhaustible. The working season is six months. There is a good water supply near the quarry. There are about 25 men employed. The first work was done here 60 years ago.

PICTOU.

Quarry owned and operated by the Pictou Quarry Company, incorporated 13 years ago. It is two miles to the eastward of Pictou Town. The material is freestone, wrought for building purposes. Mr. James Campbell is manager. The quarry is reached by the Company's railway two and a half miles from Pictou Station. The distance from the nearest shipping port is one mile. The property contains 200 acres.

The material is worked by hand. The face is about 45 feet thick, overburden about 10 feet, removed by hand. The stone is sold in the province. It is dressed at the quarry--about 50 per cent being lost in handling.

There is an average of eight men employed. The product last year was 800 tons, and shipped from quarry about 1500 tons. The dressed stone is hauled by the Company's locomotive to the Intercolonial Railway at Pictou. The stones are removed by derricks. The power is produced by a 25 h. p. boiler. The work is carried on six months in the year. There is a good water supply at the quarry. A hole put down 1000 feet showed all reestone. The first work was done about 13 years ago.

WALLACE.

Quarry at Wallace, Cumberland County, owned and operated by the Wallace Stone Company. Mr. Thomas C. Dobson, manager. The material is freestone for building purposes. The quarry is reached by a branch line two miles long from the Intercolonial at Wallace station. The property consists of 350 acres. The stone is nearly the same quality all through. The best stone is known as *Olive*: the other quality as *blue*. The belt of good stone is about six feet, showing a face 2000 feet long. The overburden, from 6 to 24 feet is removed by steam shovel. The quarry work is done by steam. There are five derricks: one locomotive: one hoisting engine 15 h. p.: three steam pumps: two steam drills, and one gasoline engine 8 h.p.

There is an average of 11 men regularly employed for eight months in the year.

The product for year ended September 30th, last was 3400 tons, dressed stone: shipped 2685 tons.

The quarry is connected with a shipping-pier at Wallace Harbor, by a self acting incline about 300 yards long.

The company is erecting, at the quarry, a stone sawing-plant, to dress and shape the small stone that is now lying around, and which is too small for foreign shipment. This plant will cost about 30,000 dollars.

There is a good water supply at the works. The first work was done here by this Company 13 years ago.

AMHERST.

Quarry at Amherst, Cumberland County, owned and operated by the Amherst Red Stone Co. The material is wrought by hand. The output is about 6500 tons a year. The property consists of fifteen acres. with an immense deposit of material. About 10 per cent is lost in handling. From 18 to 20 men are employed for about seven months in the year.

The product is all sold in Canada. There are about 200 tons on hand. There is a good water supply at the quarry.

GRANITE.

NICTAUX.

Quarry at Nictaux West, Annapolis County, leased and operated by Messrs. Hoyt and Reed. The material wrought is granite. The property consists of 25 acres, and is about 4 miles from Middleton Station, on the Dominion Atlantic Railway. The output is about 200 tons a year. The loss in handling being about 25 per cent. The work is done by steam and by hand. The material is of the same quality throughout and the supply is very large. The total product is manufactured into monuments. The working season is 8 months, and the first work was done by the present lessees in April 1909. The nearest shipping port is 30 miles away. The force averages 5 men at the quarry.

No timber is used and the water supply is small. There are 100 tons on hand.

Yours truly,

ROBERT ANDERSON,

Deputy Inspector of Mines and Quarries.

Government Core Drills.

The amount of drilling during the year by the departmental drills was 10,826 feet, the greatest amount done in any one year since the drills were purchased.

Mr. Pickings' report dealing with this work will be found in the following pages:

HIRAM DONKIN, ESQ., C. E.,
Deputy Commissioner and Inspector of Mines.

SIR:—

I beg leave to hand you herewith my report on the operations of the Government core drills during the year ended September 30th, 1912.

The demand for drills has been far greater than the supply, particularly for the steam diamond-machines. These drills, excepting short periods of idleness for repairs were in constant operation. The steam calyx drills, numbers 5 and 6, and the hand or horse-power drill number 7 also completed a large amount of work.

The total amount of boring done was 10,826 feet, by far the largest amount ever completed in any year by the departmental machines, of this boring, 6,129 feet was by diamond drills,and 4,696 feet by calyx drills. The total number of holes put down was 77, of these 54 were by diamond drills and 23 by calyx drills.

The expenditure by the department for maintenance, repairs, wages etc., was $4,413.39 which includes an expenditure of $544.36 for carbons supplied to other than departmental drills, and which amount will be refunded. Deducting this amount reduces the total expenditure to $3,869.03, an exceedingly low figure when considering the amount of boring done.

The expenditure was as follows:—

Drill Number 1	$1,228.41
Drill " 2	1,075.36
Drill " 3	478.42
Drill " 4	0.00
Drill " 5	245.34
Drill " 6	273.04
Drill " 7	199.15
Storehouse and General Acct	913.67
Total	$4,413.39
Less for carbon for other than Government drills	544.36
Corrected Total	$3,869.03

The total expenditures to date for drills, equipment, maintenance and repairs has been $82,302.41.

The cost a foot for the boring done during the year has been satisfactorily low, the average cost a foot for all boring being $1.08, a decrease of $0.20 from the average of 1910 - 1911.

The greatest cost a foot by diamond drills (average for 1 hole) was $2.02, the lowest cost $0.18.

The greatest cost a foot by Calyx drill (average for 1 hole) $2.73, the lowest $0.22.

The average carbon-cost a foot for boring by diamond drills was $0.048.

The average shot-cost a foot for boring by calyx drills was $0.040.

The cost given for several holes bored by drill number 1 does not include any charges for power as these holes were drilled below ground and the power used, air, was supplied by the company.

A comparison of costs during the year with the costs of 1910: 1911 shows as follows:—

	1911	1912	Decr.
Average cost a foot, all boring	$1.28	$1.08	0.20
Average cost a foot, by Diamond drills	1.30	0.84	0.46
Average cost a foot, Calyx drills	1.25	1.45	0.20
Shot-cost a foot for boring by Calyx drills	0.046	0.040	0.06
Carbon–cost a foot for boring by Diamond drills	0.096	0.048	0.048

This table shows decreases in all costs except the average cost a foot by Calyx drills.

During the year arrangements were made with W. P. McNeil & Co., of New Glasgow, to lease a lot of land adjoining their works at that place, and a new store-house is now being constructed. This building is 50 feet long by 30 feet wide, one storey high. It is being constructed of hollow tile, and when completed will be used as a repair-shop as well as storehouse. The store-house at Hantsport has been sold, and machines when not in use have been stored temporarily at New Glasgow.

The store-house at Hantsport was never a convenient building for storage and repair purposes, and further, the location was not a central one. The building under construction at New Glasgow has been designed to contain all the equipment excepting rods, on one floor, these to be stored in a rod-loft located in the north end of the building, and sufficient space will be available to overhaul, paint, and make general repairs to the machines.

New Glasgow was selected as a site on account of its central location as a distributing centre to the mining districts of the province.

On account of lack of storehouse, the usual annual overhauling and painting of the drills were not completed this year, but these will receive attention, as soon as the new building is ready for occupation.

Early in the year, changes were made in the application forms and bond forms required to be filed by users of the departmental drills, and a new set of rules and regulations governing the obtaining and use of core drills owned by the Department, was issued. These rules and regulations cover fully the conditions imposed and for the benefit of prospective applicants it is thought advisable to include them as part of this report.

RULES AND REGULATIONS GOVERNING THE OBTAINING AND USING OF THE CORE DRILLS OWNED BY THE NOVA SCOTIA DEPARTMENT OF MINES.

The Nova Scotia Department of Mines owns 7 prospecting drills of the following make and capacity:—

Number of Drill	Type	Nature of Power	Capacity in Feet	Diameter of Core in inches	Name of Manufacturer.
1	Diamond	Steam	1500	2	Sullivan Machinery Co.
2	"	"	900	1-1/10	Bullock Mfg. Co.
3	"	Hand	400	1-1/10	" "
4	"	"	400	1-1/10	" "
5	Calyx	Steam	1500	6	Davis Calyx Drill Co.
6	"	"	3000	6	" "
7	"	Hand or Horse	350	1 5/8	" "

Any person or company desiring to make use of one of these machines shall make application to the Commissioner of Public Works and Mines, using the printed form "Application for Government Drill" which form will be supplied by the Commissioner upon request.

Upon receipt of the application the applicant will be notified whether or not the drill applied for is then available, if available the applicant shall file with the Commissioner a bond in the sum of $1000, the applicant as principal, the surety to be a recognized guarantee or surety company doing business in the Province of Nova Scotia. Or a bond in like amount, the applicant as principal with two sureties, who must be residents of Nova Scotia, and who shall both justify. This bond must be accompanied by a certificate cheque for $250, payable to the order of the Honorable Commissioner of Public Works and Mines, and may be used by him, if necessary, to pay outstanding accounts, contracted by the applicant, directly connected with the use of the drill. When all accounts have been paid the amount of the cheque, or the balance remaining will be returned to the applicant.

Upon receipt of the bond by the Commissioner, the machine will be sent to such place, as shall be determined by the applicant, in charge of a person appointed by the Commissioner, who shall have full charge of all operations and who shall be directly responsible to the Department for the condition, safety and return of the drill and equipment in good order and condition. He shall receive and abide by instructions from the Department in all matters pertaining to his work, except the locating and depth of the holes.

The applicant shall not interfere or hinder the drill operator in any way, and if not satisfied with the methods of the operator, progress of the work, or other matters in connection with the boring, he shall make his complaints in writing to the Commissioner.

The applicant shall pay *all expenses* directly connected with the boring, from the time shipment is commenced upon his behalf, until the drill has been returned to such place as the Commissioner shall direct, which expenses shall include:—

The drill operator's salary, board and travelling expenses.

All labour at rates as may be mutually agreed upon by the parties concerned.

All charges of transport of drill and equipment (including new parts sent) moving, storing or housing of drill on the ground, from the time the drill is accepted until it has been returned.

All supplies used in connection with the actual drilling, including fuel, oil, waste, light, casing-pipe, drive-pipe, carbon-wear, carbon lost or broken, shot and gravel, not included in the regular equipment of the machine.

The drill operator shall box and ship to the department, samples of core of the strata passed through. The expense connected with the boxing and transporting of which, to the nearest shipping point, shall be paid by the applicant.

Wages and expenses due the drill operator and assistants, shall be promptly paid weekly, fortnightly or monthly as shall be mutually agreed upon by the applicant and drill operator before boring commences, and in event of payment being 15 days overdue, the drill operator is required to immediately notify the department, and unless settlement is made within additional 15 days, drilling will be discontinued, and immediate steps taken to collect all moneys due the Department, and to all persons employed in any capacity whatsoever in connection with the moving, erecting and actual operating of the drill.

The Commissioner accepts no responsibility whatever. in connection with the location of bore-holes; and in no way guarantees the cost, rate of progress or depth to which it is possible to bore, these factors depending to a great extent upon local conditions.

The drill operator is instructed to file with the Commissioner the 1st and 15th of each month, correct records of the strata passed through, showing rate of progress, core recovered and other details in connection with the work of the drill, and upon completion of each hole, a correct cost sheet showing the cost of the hole in detail. The drill operator upon request, shall supply copies of these records to the persons for whom the boring is being done.

The Commissioner reserves the right to publish the records in such form and at such time as shall be deemed proper.

The summary table and detailed records of the year's work are attached.

Summary Statement of the Year's Work.

Drill No.	Location	No. of Hole	Depth Bored		Total for Locality		Total for Drill	
			Feet	Inches	Feet	Inches	Feet	Inches
1	In vicinity of Stellarton Pictou County	7	128	8				
1	“ “ “ “ “ “	8	900	6				
1	“ “ “ “ “ “	9	472	3				
1	“ “ “ “ “ “	10	305	0				
1	“ “ “ “ “ “	11	201	7				
1	“ “ “ “ “ “	12	174	5				
1	“ “ “ “ “ “	13	221	6				
1	“ “ “ “ “	14	202	6				
1	“ “ “ “ “ “	15	180	0				
1	“ “ “ “ “ “	16	139	0				
1	“ “ “ “ “ “	17	180	0				
2	“ “ “ “ “ “	18	267	0	3372	5	3372	5
2	Wilkin's property near Windsor Hants Co.	1	31	0				
2	“ “ “ “ “	2	39	0				
2	“ “ “ “ “	3	41	0				
2	“ “ “ “ “	4	39	0				
2	“ “ “ “ “	5	29	0				
2	“ “ “ “ “	6	37	0				
2	“ “ “ “ “	7	38	0				

Summary Statement of the Year's Work.—(Continued.)

Drill No.	Location	No. of Hole.	Depth Bored		Total for Locality		Total for Drill	
			Feet	Inches	Feet	Inches	Feet	Inches
2	Wilkin's property near Windsor, Hants Co.	8	107	6				
2	" " " "	9	88	0				
2	" " " "	10	63	0				
2	" " " "	11	73	0				
2	" " " "	12	71	0				
2	" " " "	13	51	0				
2	" " " "	14	78	6				
2	" " " "	15	76	6				
2	" " " "	16	54	2				
2	" " " "	17	32	0				
2	" " " "	18	45	0				
2	" " " "	19	54	10				
2	" " " "	20	92	4				
2	" " " "	21	44	2				
2	" " " "	22	50	2				
2	" " " "	23	64	0				
2	" " " "	24	46	0				
2	" " " "	25	61	0				
2	" " " "	26	72	2				
2	" " " "	27	24	0				
2	" " " "	28	34	1	1536	5		

2	Eagle Swamp Quarry, near Windsor, N.S.	1	95	2				
2	“ “ “ “ “	2	150	4				
2	“ “ “ “ “	3	122	3				
2	“ “ “ “ “	4	119	3				
2	“ “ “ “ “	5	100	2				
2	“ “ “ “ “	6	24	3				
2	“ “ “ “ “	7	108	1	719	6	2255	11
3	Grand River Road, Loch Lomond, C.B.	1	218	0				
3	“ “ “ “ “	2	38	0				
3	“ “ “ “ “	3	22	0	278	0		
3	Bear River Digby County	1	82	9				
3	“ “ “ “	2	86	0				
3	“ “ “ “	3	21	6				
3	“ “ “ “	4	33	0	223	3	501	3
5	McLellan's Brook, Pictou County	1	670	0	670	0		
5	Sydney Mines, Cape Breton County	1	1117	0				
5	“ “ “ “	2	1034	6	2151	6	2821	6
6	In vicinity of Stellarton, Pictou County	1	696	10	696	10	696	10
7	Mar. Gypsum Co. prop. Nappan Cum. Co.	1	48	3				
7	“ “ “ “ “	2	55	0				
7	“ “ “ “ “	3	23	0				
7	“ “ “ “ “	4	100	0				
7	“ “ “ “ “	5	99	0				
7	“ “ “ “ “	6	35	0				
7	“ “ “ “ “	7	65	0				
7	“ “ “ “ “	8	16	0				
7	“ “ “ “ “	9	51	0				
7	“ “ “ “ “	10	26	6				

Summary Statement of the Year's Work.—(Continued.)

Drill No.	Location	No. of Hole.	Depth Bored		Total for Locality		Total for Drill	
			Feet	Inches	Feet	Inches	Feet	Inches
7	Mar. Gypsum Co. prop. Nappan, Cum. Co	11	20	6				
7	“ “ “ “ “	12	80	0				
7	“ “ “ “ “	13	113	0				
7	“ “ “ “ “	14	44	0				
7	“ “ “ “ “	15	112	0				
7	“ “ “ “ “	16	21	0				
7	“ “ “ “ “	17	27	0				
7	“ “ “ “ “	18	36	0	972	3		
7	Old Dog Fish Cove, Cumberland Co.	1	206	4	206	4	1178	7
	Total boring during year	77	Holes		Totaling		10826	7

DRILL NUMBER 1.

Steam Diamond, producing 2-inch core.

STELLARTON AND VICINITY.

Holes 7 to 18.

NUMBER 7 HOLE.

Location—Situated on the west side of a small brook near Tuppers on the Westville road, 40 feet south of the road and 40 feet west of the brook.

Hole put down for—Acadia Coal Company.

Mineral Sought—Coal.

Dip of Strata—Fifty degrees to vertical.

Fastest rate of boring—Two feet eight inches in one hour.

Average rate of boring—.58 feet in one hour.

Commenced hole—October 14th, 1912.

Finished Hole—October 25th, 1912.

Boring double shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Surface	Yellow clay	7			
Sandstone	Gray hard	0	8	7	8
Shale	Gray, dark	57	7	65	3
Sandstone	Brownish gray hard	63	5	128	8

This hold cost $258.68 or $2.02 a foot made up as follows:—

Labor	$ 67.60
Management	158.30
Fuel (coal)	5.00
Light, oil, waste, etc	1.74
Carbon wear	3.00
Lumber	2.24
Truckage	10.00
Blank bits, core shells, lifters	10.80
	$258.68

NUMBER 8 HOLE.

Location—Vicinity of Stellarton, on the east side of a small brook and about 800 feet south of borehole number 7, hole drilled at an angle of 45 degrees.

Hole put down for—Acadia Coal Company.

Mineral sought—Coal.

Dip of Strata—80 degrees to 45 degrees generally south east.

Fastest rate of boring—5 feet in one hour.

Average rate of boring—.8 of a foot in one hour.

Commenced hold—November 7th, 1911.

Finished Hole—January 24, 1912.

Boring by double shift with exception of short periods when only one shift was operated.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	Ins.
Surface	Soil and yellow clay	8	4	....	...
Shale	Gray	8	0	16	4
Sandstone	Gray	16	10	33	2
Shale	Gray, dark	50	4	83	6
Shale	Gray, banded with bands of ironstone	56	4	139	10
Shale	Black	8	5	148	3
Coal	Bituminous	3	0	151	3
Shale or Clay	Gray	2	3	153	6
Clay	Gray with hard yellow balls	14	2	167	8
Sandstone	Gray with bands of ironstone	55	7	223	3
Shale	Gray, dark	9	0	232	3
Sandstone	Gray, banded	17	4	249	7
Shale	Gray, dark	21	7	271	2
Sandstone	Gray, banded	9	6	280	8
Shale	Gray, banded, with ironstone and sandstone	48	11	329	7
Sandstone	Gray, banded	21	2	350	9
Shale	Gray, dark	40	3	391	0
Sandstone	Gray, banded	22	4	413	4
Shale	Gray, banded, dark & sandy.	31	2	444	6

Name of Rock	Color and other General Characteristics.	Thickness Bored Ft.	Thickness Bored Ins	Total Depth Ft.	Total Depth Ins
Shale	Gray, dark banded, with bands of ironstone	79	0	523	6
Shale	Gray, dark	22	6	546	0
Shale	Gray, banded, with bands of ironstone	8	7	554	7
Shale	Gray, dark, banded, with bands of ironstone	31	0	585	7
Shale	Gray, dark	3	3	588	10
Coal		13	6	602	4
Shale	Gray	1	8	604	0
Coal		19	2	623	2
Shale	Gray, with balls of ironstone.	7	2	630	4
Sandstone	Gray, banded	10	8	641	0
Shale	Gray, banded	3	2	644	2
Shale	Gray, dark, showing fossils	33	4	677	6
Shale	Gray, banded, and with bands of sandstone	15	0	692	6
Shale	Gray, banded, and with bands of sandstone & ironstone	8	10	701	4
Sandstone	Gray, banded, and with bands of shale & ironstone.	5	5	706	9
Sandstone	Brownish gray, hard, micaceous	30	6	737	3
Shale	Gray and dark gray, with bands of ironstone	49	11	787	2
Shale	Gray, banded and with bands of ironstone micaceous	23	5	810	7
Sandstone	Gray, hard	10	11	821	6
Shale	Gray, banded and with bands of ironstone	31	0	852	6
Shale	Gray, dark	2	9	855	3
Shale	Black, with bands of coal	12	9	868	0
Coal		4	4	872	4
Shale	Gray, with bands of ironstone	6	3	878	7
Coal		18	3	896	10
Shale	Black and very drak gray	3	8	900	6

This hole cost $937.07, $1.04 a foot, made up as follows:

Labor	$214.00
Management	540.00
Coal	44.00
Light, oil, waste, etc	7.47
Carbon wear	80.00
Lumber	5.51
Truckage	10.00
Packing	3.49
Blank bits, core shells, core lifters	32.60
Total	$937.07

NUMBER 9 HOLE.

Location—Vicinity of Stellarton, 500 feet north of borehole, number 8 and on the east side of a small brook—hole drilled at an angle of 45°.

Hole put down for—Acadia Coal Company.

Mineral sought—Coal.

Dip of strata—Surface 78° south changing abrubtly with depth at 100 feet dipping to the north at the same angle as the hole, namely 45°, at depth of 323 feet, dip again changes to south at angle of 80° and at 448 feet to north at angle of 80°.

Fastest rate of boring—2 feet, 6 inches in one hour.

Average rate of boring—.67 of a foot in an hour.

Commenced hole—February 6th, 1912.

Finished hole—March 27th, 1912.

Boring double shift.

Name of Rock	Color and other General Characteristics.	Thickness Bored		Total Depth	
		Ft.	Ins	Ft.	Ins
Surface........	Soil and clay..............	7	4	....	...
Sandstone.....	Brownish gray, hard........	10	0	17	4
Shale...........	Gray, banded.................	14	2	31	6
Shale...........	Gray dark.....................	14	3	45	9
Sandstone.....	Gray, banded, hard..........	11	6	57	3
Shale...........	Gray, banded.................	7	7	64	10
Sandstone.....	Gray, banded.................	22	6	87	4
Shale...........	Gray, banded and with bands of ironstone..........	12	11	100	3
Shale...........	Black and dark gray.........	36	2	136	5
Shale...........	Gray, dark with bands of ironstone.....................	51	9	188	2
Sandstone.....	Gray............................	3	10	192	0
Shale...........	Gray, banded.................	18	5	210	5
Sandstone.....	Gray, banded, hard..........	31	1	241	6
Shale...........	Gray, hard, banded, sandy, with bands of ironstone....	10	6	252	0
Sandstone.....	Gray, banded, hard..........	8	0	260	0
Shale...........	Gray, banded, and with bands of ironstone..........	58	0	318	0
Shale...........	Gray, dark, with bands of ironstone..................	5	10	323	10
Sandstone.....	Gray, banded.................	9	2	333	0
Shale...........	Gray, banded and with bands of ironstone..........	9	10	342	10
Sandstone.....	Gray, banded, and with bands of ironstone	41	2	384	0
Shale...........	Gray, dark....................	10	7	394	7
Sandstone.....	Gray, banded.................	16	8	411	3
Shale...........	Gray, and dark gray.........	30	9	442	0
Sandstone.....	Brown, hard..................	30	3	472	3

This hole cost $640.14, or $1.35 a foot made up as follows:—

Labor....................................	$ 131.60
Management...........................	380.00
Coal.......................................	22.70
Light, oil, waste, etc................	2.77
Carbon wear............................	73.00
Lumber..................................	5.27
Blank bits, core shells and core lifters........	24.80
Total..............................	$ 640.14

NUMBER 10 HOLE.

Location—In Albion Mine, from face of 25-foot heading east of drift from Cage Seam to Ford Seam, No. 5 level 1400 feet west from slope, on third seam. Hole drilled at angle of 30 degrees, up.

Hole put down for—Acadia Coal Company.

Purpose of boring—To tap water in Old Ford Pit workings.

Dip of strata—30 degrees.

Fastest rate of boring—5 feet in one hour.

Average rate of boring—1.34 feet in one hour.

Commenced hole—April 9th, 1912.

Finished hole—May 4th, 1912.

Boring single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal		32	8		
Coal	With hard bands of stone	74	4	107	0
Slate	Hard	6	2	113	2
Coal		176	10	290	0
Slate	Hard	15	0	305	0

This hole cost $323.86 or $1.06 a foot made up as follows:—

Labor	$152.10
Management	157.24
Light, oil, waste,etc	.21
Pipe fittings	.64
Gate Valve	2.26
Timbers	11.41
	$323.86

NOTE:—Mine-power used, no carbon wear.

NUMBER 11 HOLE.

Location—Allen Shafts, from face of 25-feet heading, from face of drift to Ford Pit Seam, from face of West drift on Cage Pit Seam, No. 2 Shaft. Hole drilled at an angle of 21 degrees 45 minutes, up.

Hole put down for—Acadia Coal Company.

Purpose of boring—To tap water in old Ford Pit workings.

Dip of Strata.

Fastest rate of boring, 45 feet in one hour.

Average rate of boring, 87 of a foot in one hour.

Commenced hole, May 13th, 1912.

Finished hole, June 13, 1912.

Boring single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal		63	7		
Shale	Gray, dark banded	138	0	201	7

This hole cost $186.66 or $0.928 a foot made up as follows:—

Labor	$ 43.20
Management	130.36
Light, oil, waste, etc.	1.50
Carbon wear	8.20
Blank bits	.60
Core Shells	2.80
	$186.66

NOTE:—Mine power used.

NUMBER 12 HOLE.

Location—Allen Shafts, along side of number 11 hole. Hole drilled at angle of 17 degrees, up.

Hole put down for—Acadia Coal Company.

Purpose of boring—To tap water in old Ford Pit workings.

Dip of Strata—

Fastest rate of boring, 3 feet in one hour.

Average rate of boring, 97 of a foot in one hour.

Commenced hole, June 14th, 1912.

Finished Hole, July 8th, 1912.

Boring single shift.

Name of Rock	Color and other General characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal........	....	83	7		
Shale........	Gray dark banded	90	10	174	5

This hole cost $154.43 or $0.887 a foot made up as follows:-

Labor........................	$ 38.40
Management.................	107.80
Light, oil, waste, etc.	1.20
Carbon wear...................	4.68
Blank bit......................	.60
Core shell	1.75
	$154.43

Note:—Mine power used.

Number 13 Hole.

Location—Albion Mine, face of east level of Ford Seam. Hole bored horizontal.

Hole put down for—Acadia Coal Company.

Purpose of boring—To tap water in Old Ford Pit workings.

Dip of strata—

Fastest rate of boring—5.5 feet in one hour.

Average rate of boring—1.83 feet in one hour.

Commenced hole—July 18th, 1912.

Finished Hole—July 31st, 1912.

Boring single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal		18	4		
Coal	With occasional balls of stone	203	2	221	6
Encountered water				221	6

This hole cost $108.33 or $0.49 a foot made up as follows:—

Labor	$ 27.20
Management	77.00
Light, oil, waste, etc	.62
Carbon wear	3.51
	$108.33

NOTE:—Mine power used.

NUMBER 14 HOLE.

Location—Albion Mine, alongside of Number 13 hole. Hole bored at an angle of 6 degrees, down.

Hole put down for—Acadia Coal Company.

Purpose of boring—To tap water in old Ford Pit workings.

Dip of strata.

Fastest rate of boring, 5 feet in one hour.

Average rate of boring, 2.24 feet in one hour.

Commenced hole, August 5th, 1912.

Finished hole, August 14th, 1912.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal		202	6	202	6

This hole cost $82.00 or $0.406 a foot made up as follows:—

Labor	19.20
Management	57.50
Light, oil, waste, etc	.30
Gate Valve	5.00
	$82.00

NOTE:—Mine power used, no carbon wear.

NUMBER 15 HOLE.

Location—Allen Shafts. Face of heading opposite number 2 balance. 60 feet from Ford, west level. Hole bored horizontal.

Hole put down for, Acadia Coal Company.

Purpose of boring, to tap water in old Ford Pit workings.

Dip of Strata, 25 degrees.

Fastest rate of boring, 15 feet in one hour.

Average rate of boring, 3.6 feet in one hour.

Commenced hole, Sept. 3rd, 1912.

Finished hole, Sept. 7, 1912.

Boring single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal		180	0	180	0

This hole cost $51.71 or $0.287 a foot made up as follows:—

Labor	11.20
Management	26.95
Light, oil, waste, etc	.60
Carbon wear	9.36
Casing pipe	3.60
	$51.71

NUMBER 16 HOLE.

Location.—Allen Shafts. Along side of Number 15 hole. Hole bored at angle of 10 degrees, down.

Hole put fown for, Acadia Coal Company.

Purpose of boring, to tap water in old Ford Pit workings.

Fastest rate of boring, 15 feet in one hour.

Average rate of boring, 3.5 feet in one hour.

Commenced hole, September 10th, 1912.

Finished hole, Sept. 13, 1912.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft	In.	Ft	In.
Coal		129	0		
Shale	Gray, dark	10	0	139	0

This hole cost $51.91 or $0.374 a foot made up as follows:—

Labor	$ 9.60
Management	23.10
Light, oil, waste, etc	.40
Carbon wear	15.21
Casing pipe	3.00
Blank bits	.60
	51.91

NOTE:—Mine power used.

NUMBER 17 HOLE.

Location—Allen Shafts, alongside of holes numbers 15 and 16. Hole bored at an angle of 12 degrees 30 minutes, down.

Hole put down for, Acadia Coal Company.

Purpose of boring, to tap water in old Ford Pit workings.

Fastest rate of boring, 15 feet in one hour.

Average rate of boring, 3.5 feet in one hour.

Commenced hole, September 14th, 1912.

Finished hole, September 19th, 1912.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Coal.........	....	180	0	180	0

This hole cost $32.10 or $0.18 a foot made up as follows:—

Labor........................	$ 6.40
Management..................	23.10
Light, oil, waste, etc...........	.20
Casing pipe...................	2.40
	32.10

NOTE:—Mine power used. No carbon wear.

NUMBER 18 HOLE.

Location—Allen Shafts, between Number. 1 and 1½ balances on the Ford west level. Hole bored at an angle of 24 degrees, down.

Hole put down for, Acadia Coal Company.

Purpose of boring, to tap water in old Ford Pit workings.

Fastest rate of boring, 12 feet in one hour.

Average rate of boring, 3.3 feet in one hour.

Commenced hole, September 25th, 1912.

Finished Hole, October 3rd, 1912.

Boring single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	No.
Coal.........	....	267	0	267	0
Encountered water....	....			267	0

This hole cost $83.14 or $0.31 a foot made up as follows:—

Labor	$19.20
Management	53.90
Light, oil, waste, etc	.30
Carbon wear	2.34
Casing pipes	2.40
Gate Valve	5.00
	$83.14

NOTE:—Mine power used.

DRILL NUMBER TWO.

Steam-power Diamond — Producing 15/16 inch core.

WINDSOR, HANTS COUNTY.

28 HOLES.

HOLES NUMBER 1 to 28.

Location—About two miles from the town of Windsor on what is known as the Wilkin's property. For location of different holes see accompanying plan.

Hole put down for, John P. Graham, et al.

Mineral sought, Gypsum.

Commenced work, December 11th, 1911.

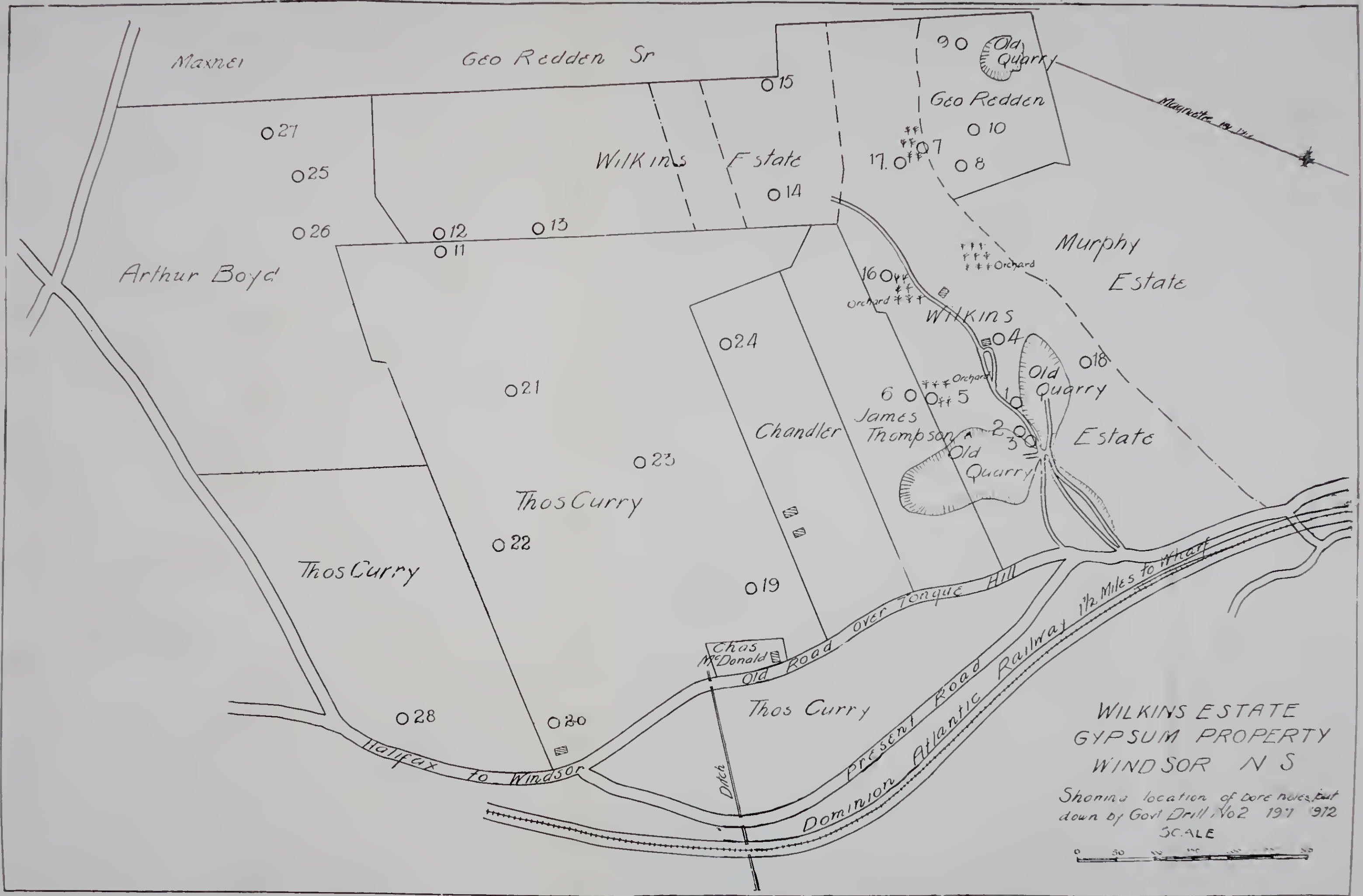
Finished work, June 17th, 1912.

All work single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
	HOLE NUMBER 1.				
Surface......	Red clay.................	20	0		
Sandstone....	Red, soft.................	10	0	30	0
Gypsum.....	White..................	1	0	31	0
	HOLE NUMBER 2.				
Surface......	Red clay, and boulders.....	19	6		
Limestone...	Gray....................	3	4	22	10
Sandstone....	Red.....................	10	2	33	0
Gypsum.....	White mixed with selenite...	6	0	39	0
	HOLE NUMBER 3				
Surface......	Red clay.................	8	2		
Gypsum.....	White..................	1	2	9	4
Sandstone....	Red, soft.................	10	8	20	0
Sandstone....	Gray....................	1	8	21	8
Gypsum.....	White..................	7	4	29	0
Sandstone and Clay	Gray, red bands of clay......	12	0	41	0
	HOLE NUMBER 4.				
Surface......	Red clay.................	29	6		
Gypsum.....	Blue, mixed with selenite....	9	6	39	0
	HOLE NUMBER 5.				
Surface......	Red clay.................	14	6		
Gypsum.....	White, very porous.........	14	6	29	0
	HOLE NUMBER 6.				
Surface......	Red clay.................	20	0		
Limestone....	Gray, very soft............	17	0	37	0
	HOLE, NUMBER 7.				
Surface......	Red clay................	17			
Gypsum.....	White..................	1	3	18	3
Clay........	Red.....................	19	10	38	1

Name of Rock	Color and other General characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
	Hole Number 8.				
Surface	Red clay	23	6		
Gypsum	Blue with bands of selenite	2	8	26	2
Clay	Red	3	6	29	8
Gypsum	Blue with bands of selenite	7	10	37	6
Gypsum	Blue	73	6	101	0
Limestone	Gray	6	6	107	6
	Hole Number 9.				
Surface	Red clay	10	9		
Gypsum	Blue, with some selenite	7	3	18	0
Clay and Sandstone	Red	12	3	30	3
Gypsum	Blue with selenite	12	6	42	9
Gypsum	Blue, hard	45	3	88	0
	Hole Number 10.				
Surface	Red clay	25	6		
Gypsum	Blue with selenite	7	2	32	8
Gypsum & Clay	Blue with selenite, red clay	27	2	59	10
Limestone	Gray	1	8	61	6
Gypsum	Blue	1	6	63	0
	Hole Number 11				
Surface	Red clay	18	5		
Limestone	Grey	0	8	19	1
Gypsum	White, porous, with narrow bands of blue	35	6	54	7
Gypsum	White	14	6	69	1
Gypsum and limestone	White and gray	0	10	69	11
Gypsum	White	3	1	73	0
	Hole Number 12.				
Surface	Red clay and sand	13	8		
Gypsum	White	3	4	17	0

Name of Rock	Color and other general characteristics.	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Gypsum and Clay	White, soft, red clay	3	8	20	8
Gypsum	White soft	37	4	58	0
Gypsum	Blue, hard	13	0	71	0
	HOLE NUMBER 13.				
Surface	Red clay	20	0		
Gypsum	Grey with narrow bands of selenite	31	0	51	0
	HOLE NUMBER 14.				
Surface	Red clay	13	0		
Gypsum	White, soft with selenite	27	3	40	3
Gypsum	White, soft	12	3	52	6
Gypsum	Grey, with bands of selenite	21	0	73	6
Limestone	Grey	5	2	78	8
	HOLE NUMBER 15.				
Surface	Red clay	34	6		
Selenite	White	2	4	36	10
Gypsum and Selenite	White in narrow bands	8	4	45	2
Gypsum	Grey, with narrow bands of selenite	7	10	53	0
Gypsum	White, soft	23	6	76	6
	HOLE NUMBER 16.				
Surface	Yellow clay	10	0		
Gypsum	White soft	40	0	50	0
Selenite	White	0	6	50	6
Clay	Red	3	8	54	2
	HOLE NUMBER 17.				
Surface	Red clay	26	4		
Limestone	Grey	5	8	32	0



WILKINS ESTATE
GYPSUM PROPERTY
WINDSOR N S

Showing location of bore holes put
down by Govt Drill No2 1911 1912

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
	HOLE NUMBER 18.				
Surface......	Red clay and boulders.....	35	0		
Gypsum.....	White soft...............	0	8	35	8
Clay and Boulders...	....	9	4	45	0
	HOLE NUMBER 19.				
Surface......	Gray clay...............	6	0		
Selenite......	Gray....................	19	2	25	2
Selinate and Gypsum ...	Gray, soft...............	29	8	54	10
	HOLE NUMBER 20.				
Surface......	Red clay................	17	6		
Gypsum.....	White soft, with grey bands..	21	8	39	2
Gypsum.....	White soft...............	46	2	85	4
Gypsum	Blue hard................	7	0	92	4
	HOLE NUMBER 21.				
Surface......	Red clay................	10	2		
Gypsum	White, very soft...........	29	6	39	8
Gypsum	Blue hard................	4	6	44	2
	HOLE NUMBER 22.				
Surface......	Clay, sand and boulders.....	50	2	50	2
	HOLE NUMBER 23.				
Surface......	clay and sand.............	12	4		
Gypsum	White soft...............	3	6	15	10
Gypsum	Grey and white bands very soft..................	18	8	34	6
Gypsum	White and grey bands very soft..................	29	6	64	0

Name of Rock	Color and other general characteristics	Thickness bored Feet	Thickness bored In.	Total depth Feet	Total depth In.
	HOLE NUMBER 24.				
Surface	Clay and sand	12	2		
Selenite and Clay	White and red with narrow bands of limestone	23	10	36	0
Gypsum and Selenite	White in alternate bands.	9	8	45	8
Limestone	Grey	0	4	46	0
	HOLE NUMBER 25.				
Surface	Clay and boulders	10	0		
Gypsum	White soft	27	8	37	8
Gypsum	White and hard blue in bands	23	4	61	0
	HOLE NUMBER 26.				
Surface	Clay and boulders	34	4		
Gypsum	White soft	22	1	56	5
Gpysum	Blue hard	1	7	58	0
Gypsum	White soft	8	4	66	4
Gypsum	White and blue in bands.	5	10	72	2
	HOLE NUMBER 27.				
Surface	Clay gravel and boulders	24	0	24	0
	HOLE NUMBER 28.				
Surface	Red clay boulders and sand	26	0		
Gypsum	White soft	8	0	34	0

These 28 holes cost $1128.76 or an average of $40.11 a hole: the highest cost a foot was $1.51 and the lowest cost a foot $.39, the average cost a foot $0.734: the detailed cost of the boring was as follows:—

Labor	$387.19
Management	486.00
Fuel (Coal)	83.23

Light, oil, waste, etc	5.00
Material used in housing etc.	8.80
Freight and truckage	87.32
Miscellaneous expenses	64.37
Carbon wear	5.85
Casing pipe	2.00
	$1128.76

Wentworth Gypsum Company's Quarries Near Windsor.

HOLES 1 TO 7.

Location—In and about Eagle Swamp and Hunter's Quarries near Windsor.

Hole put down for, Wentworth Gypsum Company.

Mineral sought, Gypsum.

Commenced hole, July 6th, 1912.

Finished Hole, Number 7, September 11th, 1912.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
	HOLE NUMBER 1.				
Gypsum	Blue hard	20	6		
Gypsum	Blue hard with narrow bands of white	57	8	78	2
Limestone	Gray	6	2	84	4
Gypsum and Limestone	Alternate bands	1	10	86	2
Gypsum	Blue, hard	9	0	95	2
	NUMBER 2 HOLE.				
Surface	Clay and gypsum	4	0		
Gypsum	White soft	11	6	15	6
Gypsum	White, narrow bands of limestone	14	8	30	2
Gypsum	White and hard blue mixed	2	2	32	4
Gypsum	White with streaks of limestone	21	8	54	0

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Limestone....	Gray dark................	9	2	63	2
Gypsum	White soft................	1	2	64	4
Gypsum	White with narrow streaks of limestone.......	2	2	66	6
Gypsum	Blue hard................	3	5	69	11
Gypsum	Blue with narrow streaks of soft white gypsum and limestone.............	9	5	79	
Gypsum	White soft with narrow streaks of hard blue and limestone............	43	2	122	4 4
Gypsum	Blue hard................	27	10	150	6
	NUMBER 3 HOLE.				
Surface......	Clay and gypsum..........	1	0		
Gypsum	White soft, and blue hard,... alternate..............	15	4	16	4
Gypsum	Blue hard................	19	11	36	3
Gypsum	White soft...............	5	9	42	0
Gypsum and limestone...	White and blue limestone in narrow bands...........	14	2	56	2
Limestone....	Gray....................	6	1	62	3
Gypsum	White soft with narrow bands of limestone.......	26	6	88	9
Gypsum	Blue hard................	16	3	105	0
Gypsum	White soft bands of limestone	11	4	116	4
Gypsum	Blue hard................	5	11	122	3
	NUMBER 4 HOLE.				
Surface......	Clay and sand............	18	8		
Gypsum	Blue hard................	10	4	29	0
Gypsum and limestone ..	White with narrow streaks of limestone............	33	0	62	0
Gypsum	Blue and white alternate....	4	5	66	5
Gypsum	White soft with streaks of limestone..............	10	2	76	7
Gypsum	Blue hard................	14	5	91	0
Gypsum	White soft with bands of limestone..............	21	2	112	2
Gypsum	Blue hard................	7	1	119	3

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
	NUMBER 5 HOLE.				
Surface	Clay and gravel	19	0		
Gypsum	Blue hard	72	2	91	2
Gypsum	Blue, hard, streaked with limestone	28	0	100	2
	NUMBER 6 HOLE.				
Surface	Red clay and sand	16	2		
Gypsum	Blue hard	8	1	24	3
	NUMBER 7 HOLE.				
Surface	Red clay and sand	21	3		
Gypsum	White soft	1	4	22	7
Gypsum	Blue hard	0	5	23	0
Gypsum	White soft	11	2	34	2
Gypsum	Blue hard	9	3	43	5
Gypsum	White and blue mixed	4	7	48	0
Gypsum	White soft	12	3	60	3
Gypsum	White mixed with limestone	5	1	65	4
Gypsum	White soft	11	2	76	6
Gypsum	Blue hard	6	0	82	6
Gypsum	White soft	10	4	92	10
Gypsum	Blue hard	15	3	108	1

These seven holes cost $484.58 or an average of $69.22 a hole: the highest cost a foot was $0.90 the lowest $0.57 the average cost a foot $0.67 the cost in detail was as follows.

Labour	$134.87
Management	243.20
Fuel, coal	28.56
Light, oil, waste, etc	1.80
Material used in housing	10.00
Truckage	32.75
Hauling water	29.00
Casing pipe	4.40
TOTAL	$484.58

NOTE:—Carbon-wear very small and not included, as too small to make up.

Drill Number 3.

Hand diamond, producing 15/16 inch core.

Loch Lomond, Cape Breton County.

Number 1 Hole.

Location—Loch Lomond Cape Breton County., 132 feet, in a south westerly direction from where Benjamin's Brook crosses the Grand River road.

Hole put down for—Henry McDonald, et al.

Mineral Sought—Coal.

Dip of strata—Not determined.

Fastest rate of boring—2 feet in one hour.

Commenced hole—May 18th, 1912.

Finished hole—June 3, 1912.

Boring single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Surface	Clay	4	0		
Sandstone	Gray and blueish gray	46	0	50	0
Sandstone	Gray and blueish gray with quartz	4	8	54	8
Sandstone	Gray and blueish gray	24	8	79	4
Slate	Dark	9	8	89	0
Sandstone	Gray and blueish gray	1	0	90	0
Limestone	Gray	0	6	90	6
Sandstone	Gray and blueish gray	11	6	102	0
Limestone and sandstone	Dark blue and gray, mixed	12	9	114	9
Sandstone	Gray light and dark mixed	20	3	135	0
Granite	Gray and pink fine grained	83		218	0

Attempts were made to get two additional holes down but on account of a very heavy surface which caved badly the work was abandoned. Hole No. 2 was abandoned at a depth of 38 feet and hole No. 3 at a depth of 22 feet.

This work cost $428.93 or $1.54 a foot, made up as follows.—

Labor	$117.50
Management	202.51
Oil, waste	0.50
Carbon wear	77.00
Casing pipe	0.50
Freight	24.32
Blank bits, lifters, etc	6.60
	$428.93

This drill was applied for and used by the Canadian Pacific Railway Co., for the purpose of making test borings for bridge foundations, at Bear River: four holes were put down totaling 223 feet 3 inches.

While the number of feet bored has been included in the summary table as the work was not for mining purposes, it is not thought necessary to give other details.

DRILL NUMBER 5.

1500 feet, steam-power Calyx, producing 6 inch core.

MACLELLAN'S BROOK, PICTOU COUNTY.

HOLE NUMBER 1.

Location—McLellan's Brook, 505 feet south from crossing where St. Mary's main road crosses the Vale Colliery Railway, and 515 feet south west of Black Spring.

Hole put down for—James Stewart et al.

Mineral sought—Oil shales.

Dip of Strata—north east about 8 degrees.

Fastest rate of boring—4 feet 7 inches in one hour.

Average rate of boring—.94 of a foot in one hour.

Commenced hole—December 4th, 1911.

Finished hole—February 2nd, 1912.

Boring, December 4th to 7th, 16 and 17 single shift. Dec. 18th, to February 2nd, double shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Surface	Clay and gravel, blue	19	0		
Sandstone	Gray	2	0	21	0
Clay and gravel	Blue	8	0	29	0
Sandstone	Gray	2	6	31	6
Shale	Brown.	5	0	36	6
Shale	Gray, dark	18	0	54	6
Shale	Black	11	6	66	0
Shale	Gray, dark	35	6	101	6
Shale	Brown, dark.	16	0	117	6
Shale	Gray and brown, bands of ironstone	15	0	132	6
Sandstone	Gray	27	9	160	3
Shale	Gray	15	9	176	0
Shale	Gray and brown, bands of ironstone	4	0	180	0
Shale	Gray	32	0	212	0
Shale	Brown	2	4	214	4
Shale	Gray	29	0	243	4
Sandstone and Shale	Gray	33	8	277	0
Sandstone	Gray	24	0	301	0
Shale	Gray	61	0	362	0
Shale	Brown.	4	0	366	0
Shale	Gray	31	0	397	0
Sandstone and Shale	Brown and gray, bands of ironstone	25	6	422	6
Sandstone and Shale	Gray	17	6	440	0
Sandstone	Gray	50	6	490	6
Shale and Sandstone	Gray	33	0	523	6
Shale and Sandstone	Gray and brown, bands of ironstone	10	6	534	0
Shale	Gray, hard and soft bands	43	0	577	0
Shale	Brown	93		670	0

This hole cost $1221.23 or $1.82 a foot made up as follows:—

Labor	$432.85
Management	236.16
Fuel, coal	141.50
Light, oil, waste, etc	35.00
Shot	37.35
Gravel	1.00
Material used in housing etc.	63.03
Drive-pipe	35.00
Freight, truckage	176.34
Shot bits	48.00
Core barrels	15.00
	$1221.23

SYDNEY MINES.

2 HOLES.

NUMBER 1 HOLE.

Location—Sydney Mines, 13 feet east of the pumping-shaft number 6 Colliery.

Hole put down for—Nova Scotia Steel and Coal Company.

Mineral sought—Coal.

Dip of Strata—6 degrees east.

Fastest rate of boring—5.5 feet in one hour.

Average rate of boring—1 foot in one hour.

Commenced hole—April 16th, 1912.

Finished hole—June 24th, 1912.

Drill operated double shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Surface		19	0		
Sandstone	Gray	1	6	20	6
Fire-clay	Gray	0	9	21	3
Sandstone	Gray	18	0	39	3
Fire-clay and coal	Gray, black	0	9	40	0
Sandstone and shale	Gray	58	0	98	0
Shale	Red	2	6	100	6
Shale	Greenish, gray	2	0	102	6
Shale and sandstone	Red and gray mixed and in bands	37	6	140	0
Sandstone	Gray and brown mixed with ironstone	14	0	154	0
Shale	Gray and black	5	0	159	0
Sandstone	Gray	18	0	177	0
Shale	Gray	8	0	185	0
Sandstone and shale	Gray	30	0	215	0
Sandstone and shale	Red and greenish gray	22	6	237	6
Sandstone and shale	Greenish gray	31	0	268	6
Shale	Gray	18	0	286	6
Shale	Gray, dark, showing fossils	27	0	313	6
Shale	Gray, light	8	6	322	0
Sandstone	Gray, micaceous	33	0	355	0
Hole passed through space in mine workings		0	9	355	9
Sandstone and shale	Gray	8	3	364	0
Coal		5	0	369	0
Fire-clay	Gray	5	0	374	0
Shale	Gray, dark	5	6	379	6
Sandstone	Gray, micaceous	8	0	387	6
Sandstone and shale	Gray	20	0	407	6
Sandstone	Gray with bands of ironstone	35	6	443	0
Shale	Gray	10	6	453	6
Sandstone	Gray	13	0	466	6
Shale and marl	Gray	13	0	479	6

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Shale	Gray, brownish and greenish gray	39	0	518	6
Sandstone and shale	Gray	42	6	561	0
Shale	Brown and greenish gray	32	0	593	0
Sandstone and shale	Gray	10	0	603	0
Shale	Gray	6	0	609	0
Coal		0	9	609	9
Shale	Gray	39	3	649	0
Fire-clay	Gray	3	6	652	6
Sandstone and shale	Gray	4	0	656	6
Fire-clay	Gray	5	0	661	6
Coal		1	0	662	6
Fire-clay	Gray	1	6	664	0
Conglomerate.	Gray, fine	4	0	668	0
Sandstone	Gray	7	6	675	6
Sandstone and shale	Gray, bands	105	0	780	6
Fire-clay	Gray	0	9	781	3
Coal		4	3	785	6
Fire-clay	Gray	2	4	787	10
Sandstone and shale	Greenish, gray, micaceous	16	2	804	0
Shale	Gray, dark	8	0	812	0
Sandstone and shale	Greenish gray	4	6	816	6
Sandstone	Gray	29	6	846	0
Shale	Gray	12	0	858	0
Sandstone	Gray, dark	3	0	861	0
Shale	Gray, showing fossils	4	0	865	0
Coal		1	3	866	3
Shale	Gray dark showing fossils.	10	9	877	0
Shale and coal	Black	1	6	878	6
Sandstone and shale	Gray	41	6	920	0
Sandstone and shale	Red and gray	36	0	956	0
Shale	Gray	6	0	962	0
Coal		5	3	967	3
Shale	Black	1	0	968	3

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Shale	Gray	2	6	970	9
Coal		0	4	971	1
Shale	Gray	20	6	991	7
Sandstone	Gray	62	5	1054	0
Shale	Gray	4	0	1058	0
Coal		0	4	1058	4
Shale	Gray	14	0	1072	4
Fire-clay	Gray	4	0	1076	4
Sandstone and shale	Greenish gray	40	8	117	0

This hole cost $1445.04 or $1.29 a foot made as up follows:—

Labor	$572.00
Management	264.44
Fuel coal	55.90
Light, oil, waste, etc.	25.38
Shot	61.65
Gravel	5.00
Material used in housing etc.	63.17
Casing hole through pit, including cost of casing	139.50
Freight, truckage, etc	165.00
Shot bits	48.00
Calyx sections	15.00
Core barrels	30.00
	1445.04

NUMBER 2 HOLE.

Location—Sydney Mines, along side of main road, running from Sydney Mines to North Sydney, and 110 feet east of centre of Cashan's-Brook Bridge.

Hole put down for—Nova Scotia Steel and Coal Company.

Mineral sought—Coal.

Dip of strata—12 degrees east.

Fastest rate of boring—5.5 feet in one hour.

Average rate of boring—1.25 feet.

Commenced hole—July 4th, 1912.

Finished hole—August 21st, 1912.

Boring double shift.

Name of Rock	Color and general other characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Surface	Clay and gra vel	25	0		
Marl	Red and blue	34	0	59	0
Shale and sandstone	Gray and brown shale showing fossils	17	0	76	0
Coal and shale	Gray (shale)	2	0	78	0
Fire-clay	Gray	5	0	83	0
Coal		4	0	87	0
Shale	Gray	3	0	90	0
Sandstone	Gray	14	0	104	0
Shale	Gray	1	6	105	6
Coal		0	6	106	0
Shale	Gray	13	6	119	6
Sandstone and shale	Gray and brown	53	6	173	0
Coal		2	4	175	4
Sandstone	Gray	12	2	187	6
Shale and coal	Dark gray (shale)	2	0	189	6
Sandstone and ironstone	Greenish gray and brown	6	0	195	6
Sandstone	Gray	63	0	258	0
Sandstone	Gray, very coarse	3	6	261	6
Shale	Gray	10	0	271	6
Sandstone and shale	Gray	8	6	280	0
Coal		2	9	282	9
Shale	Gray	6	3	289	0
Sandstone	Gray	51	6	340	6
Shale	Dark gray	8	0	348	6
Sandstone and shale	Gray	5	0	353	6
Sandstone	Gray	18	0	371	6
Sandstone and shale	Gray	34	0	405	6
Sandstone	Gray	47	6	453	0
Conglomerate	Grey	28	6	481	6
Shale	Gray	5	0	486	6
Sandstone	Gray	5	0	491	6
Conglomerate	Gray	14	6	506	0
Sandstone	Gray	27	6	533	6
Sandstone	Gray very coarse and hard.	19	6	553	0
Sandstone	Gray	11	0	564	0
Clay	Gray soft	3	0	567	0
Shale	Dark gray	4	0	571	0

Name of Rock	Color and general other characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Shale and sandstone	Greenish gray and red	29	6	600	6
Shale	Red and greenish gray	30	6	631	0
Sandstone	Gray	62	6	693	6
Conglomerate	Greenish gray	24	0	717	6
Sandstone	Gray	59	0	776	6
Shale	Dark gray	3	0	779	6
Sandstone	Gray	49	0	828	6
Sandstone and conglomerate	Gray	26	0	854	6
Sandstone shale and conglomerate	Dark gray and gray	50	0	904	6
Sandstone and conglomerate	Gray	130	0	1034	6

This hole cost $1065.87 or $1.03 a foot made up as follows:—

Labour	$454.71
Management	192.54
Fuel (coal)	88.20
Light, oil, waste, etc	22.42
Shot	54.00
Casing-pipes	2.00
Gravel	5.00
Lumber	8.00
Erecting and taking drill down	43.00
Truckage	25.00
Freight to store house	66.00
Unloading drill	12.00
Shot bits, core-barrels, calyx	93.00
	$1065.87

DRILL NUMBER 6.

3000 feet Calyx producing 6 inch Core.

STELLARTON.

NUMBER 1 HOLE.

Location—Between Stellarton and Westville, 33 feet east of centre of Smokey-Town road and 350 feet north west of house owned and occupied by George Hughes.

Hole put down for—Acadia Coal Company

Mineral sought—Coal.

Dip of strata—45 degrees at surface, 20 degrees at bottom of hole.

Fastest rate of boring—3 feet 2 inches in one hour.

Average rate of boring—during actual drilling .82 of a foot an hour.

Commenced hole—April 1st., 1912.

Finished hole—August 26th, 1912.

Boring, all single shift.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Surface	Yellow soil and sandstone	19	0		
Sandstone	Gray hard	1	0	20	0
Shale	Blue soft	9	0	29	0
Shale	Red soft	3	0	32	0
Shale	Red and blue	26	8	58	8
Sandstone	Gray	2	6	61	2
Shale	Blue	16	10	78	0
Sandstone	Gray	1	6	79	6
Shale	Blue	20	6	100	0
Sandstone	Gray	2	0	102	0
Shale	Blue	13	3	115	3
Sandstone	Gray	20	7	135	10
Shale	Blue and dark blue	141	3	277	1
Shale and sandstone	Blue alternate bands	5	8	282	9
Shales	Dark soft	39	10	322	7
Sandstone	Gray	1	6	324	1
Shale	Blue	5	0	329	1
Sandstone	Gray	9	8	338	9
Sandstone and shale	Gray and blue, alternate bands	8	7	347	4
Shale	Blue hard	14	9	362	1
Sandstone and shales	Gray and blue alternate bands	1	0	363	1
Sandstone	Gray	18	1	381	2
Shale	Dark	7	7	388	9
Sandstone	Gray, with thin bands of dark shale	36	1	424	10
Fire clay	Dark	2	6	428	4
Shale	Blue	36	10	465	2
Sandstone and shale	Gray and blue alternate bands	43	2	508	4
Shale	Black	23	6	531	10
Shale	Blue, hard	7	0	538	10
Sandstone	Gray, light	8	0	546	10
Shale	Blue	1	0	547	10
Sandstone	Gray	6	10	554	8
Shale	Blue	10	1	564	9
Sandstone and shale	Gray, and blue and black alternate bands	90	3	655	0
Shale and fireclay	Black	9	7	664	7
Sandstone	Gray	21	5	686	0
Shale	Black	10	10	696	10

This hole cost $1710.40 or $2.46 a foot made up as follows:—

Labor	$470.40
Management	439.08
Fuel, coal	250.25
Light, oil, waste, etc.	5.39
Shot	35.75
Gravel	2.00
Material used in housing	30.00
Casing-pipe	325.99
Freight and truckage, etc.	103.54
Shot bits	48.00
	$1710.40

NOTE:—The high cost of this hole was due to frequent cavings, causing delays and necessitating casing, delays on account of lack of shot and fuel and further, 200 feet of casing pipe was put in for purpose of allowing the continuation of the hole by diamond drill, which is now being done.

DRILL NUMBER 7.

Hand power or horse power Calyx, producing 1¾ inch core.

NAPPAN, CUMBERLAND COUNTY.

18 HOLES.

HOLES 1- 18.

Location—These holes were put down in and around the quarry of the Maritime Gypsum Company at Nappan.

Hole put down for—Maritime Gypsum Company.

Mineral sought—Gypsum.

Commenced work—November 30th, 1911.

Finished work—June 20th, 1912.

NOTE—All work single shift. Work discontinued on account of severe weather, February 1st, to March 4th.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
	NUMBER 1 HOLE.				
Surface......	Clay.....................	7	0		
Gypsum	White soft..............	23	0	30	0
Gypsum.....	White hard..............	18	3	48	3
	NUMBER 2 HOLE.				
Surface......	Red clay................	8	0		
Gypsum	Reddish soft.............	12	0	20	0
Gypsum	White, soft..............	15	0	35	0
Gypsum.....	Reddish soft.............	12	0	47	0
Sandstone....	Red coarse...............	0	4	47	4
Gypsum	Redish soft..............	7	8	55	0
	NUMBER 3 HOLE				
Surface......	Red Clay.................	7	0		
Gypsum.....	White....................	1	0	8	0
Clay.........	Red......................	15	0	23	0
	NUMBER 4 HOLE.				
Surface......	Red clay................	9	0		
Gypsum	White soft..............	10	0	19	0
Gypsum	White with hard gray nodules	1	0	20	0
Gypsum	White and red mottled	1	0	21	0
Gypsum	White....................	14	9	35	9
Gypsum	White with pale pink bands..	16	0	51	9
Gypsum	White....................	13	3	65	0
Gypsum.....	Red......................	0	6	65	6
Gypsum.....	White....................	6	6	72	0
Gypsum.....	White with blue clay seams..	28	0	100	0
	NUMBER 5 HOLE.				
Surface......	Black mud...............	11	6		
Gypsum	White soft..............	26	6	38	0
Gypsum	White with red clay seams...	2	0	40	0
Gypsum.....	White soft..............	32	0	72	0
Gypsum......	Red and yellow...........	1	0	73	0
Sandstone....	Red......................	0	6	73	6
Gypsum......	White....................	12	6	86	0

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
Gypsum......	White with red clay seams...	3	0	89	0
Gypsum......	White..................	10	0	99	0
	NUMBER 6 HOLE.				
Surface......	Mud and old timbers.......	35	0	35	0
	NUMBER 7 HOLE.				
Surface......	Red clay................	16	0		
Gypsum	White..................	4	0	20	0
Gypsum......	Pink...................	14	0	34	0
Gypsum	White..................	1	0	34	0
Gypsum	White with bands of red sandstone and clay.......	31	0	65	0
	NUMBER 8 HOLE.				
Surface.......	Red clay................	16	0	16	0
	NUMBER 9 HOLE.				
Gypsum	White..................	12	0		
Gypsum	White and pink bands.......	7	0	19	0
Gypsum......	White with seams of clay and sandstone..............	2	6	21	6
Conglomerate.	Red....................	6	6	28	0
Gypsum	White and pink...........	2	0	30	0
Conglomerate	Red composed of sandstone gypsum and clay.........	4	0	34	0
Gypsum	Pink...................	6	0	40	0
Conglomerate	Red, composed of sandstone gypsum and clay.........	5	0	45	0
Sandstone....	Red....................	4	6	49	6
Conglomerate	Red composed of sandstone gypsum and clay.........	1	6	51	0
	NUMBER 10 HOLE				
Surface......	Red clay................	6	0		
Gypsum......	White..................	20	6	26	6

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Ft.	In.	Ft.	In.
	NUMBER 11 HOLE.				
Clay and gypsum	Old filling	8	0		
Gypsum	White	12	6	20	6
	NUMBER 12 HOLE.				
Surface	Red clay	4	0		
Gypsum	White	45	0	49	0
Gypsum	Pink and white bands	9	6	58	6
Gypsum	Red mixed with clay	8	6	66	0
Sandstone	Red with clay band	9	0	75	0
Gypsum and clay	Yellow and red	5	0	80	0
	NUMBER 13 HOLE.				
Surface	Red clay and sand	18	0		
Gypsum	White with a little pink, soft	23	0	41	0
Sandstone	Red	0	2	41	2
Gypsum	Blue hard	4	1	45	3
Gypsum	White hard	10	3	55	6
Gypsum	Blue hard	2	0	57	6
Gypsum	White	6	6	64	0
Sandstone	Red	9	0	73	0
Gypsum	White, pink and blue banded	40	0	113	0
	NUMBER 14 HOLE.				
Surface	Red clay and sand	13	0		
Gypsum	White	6	0	19	0
Sandstone	Red	2	0	21	0
Gypsum	White	6	0	27	0
Gypsum	Red with white streaks	3	0	30	0
Gypsum	White	14	0	44	0
	NUMBER 15 HOLE.				
Surface	Clay and sand	6	0		
Gypsum	White soft	42	0	48	0
Sandstone	Red	1	0	49	0
Gypsum	White very soft	11	0	60	0

Name of Rock	Color and other general characteristics.	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Gypsum	White hard	8	0	68	0
Gypsum	White soft	8	0	76	0
Gypsum	White streaks of hard	1	0	77	0
Clay and sand	Red with pieces of streaked gypsum	5	0	82	0
Gypsum	White streaks of hard	4	0	86	0
Gypsum	White and soft with a little hard	26	0	112	0
	NUMBER 16 HOLE.				
Surface	Clay and sandstone	15	0		
Gypsum	White	1	0	16	0
Clay and stone		5	0	21	0
	NUMBER 17 HOLE.				
Surface	Clay and sand	9	0		
Gypsum	White	5	0	14	0
Clay and sand	Red	6	0	20	0
Gypsum	White and soft	7	0	27	0
	NUMBER 18 HOLE.				
Surface	Clay and sand	5	0		
Gypsum	White and soft	13	0	18	0
Gypsum	White mixed with clay and sand	7	0	25	0
Gypsum	White hard	4	0	29	0
Gypsum	White soft	5	0	34	0
Gypsum	White hard	2	0	36	0

These holes cost $1055.05 or an average of $58.61, the greatest cost a foot was $2.73, and the lowest cost a foot was $0.22. the average cost a foot was $126. The detailed cost of the work was as follows:—

Labour	$570.22
Management	452.18
Casing pipe	7.25
Shot	.40
Freight truckage	25.00
Total	$1055.05

NOTE:—The cost and progress of this work was considerably effected by the exposed situation of the bore-holes, many days being lost on account of it not being fit for men to operate the drill.

OLD DOG FISH COVE, CUMBERLAND COUNTY.

1 HOLE.

Location—At Old Dog Fish Cove, Bay of Fundy, about 1 mile directly north of Lower-Cove Post Office.

Hole put down for—Max Sterne, et al.

Mineral sought—Oil Shales.

Dip of strata—37 degrees, south 73 degrees east.

Fastest rate of boring—4 feet 3 inches in one hour.

Average rate of boring—.65 of a foot in one hour.

Commenced hole—August 17th, 1912.

Finished hole:—September 24th, 1912.

Boring single shift, horse-power.

Name of Rock	Color and other general characteristics	Thickness bored		Total depth	
		Feet	In.	Feet	In.
Surface	Red clay	4	0		
Sandstone	Gray soft	31	0	35	0
Sandstone	Gray hard and soft alternate	35	0	70	0
Conglomerate	Blueish gray	4	0	74	0
Sandstone	Gray	1	6	75	6
Conglomerate	Gray	1	4	76	10
Shale	Brown soft	11	6	88	4
Shale	Brownish green, soft	24	1	112	5
Shale	Dark blue and black	13	7	126	0
Shale	Grayish blue	11	11	137	11
Sandstone	Blue, fine grained	24	6	162	5
Conglomerate	Gray	1	4	163	9
Sandstone	Gray, fine grained, hard	13	3	177	0
Shale	Brown	1	8	178	8
Shale	Greenish blue	3	10	182	6
Sandstone	Brown	4	11	187	5
Shale	Greenish brown	1	10	189	3
Sandstone	Greenish brown	9	3	198	6
Shale	Red	3	11	202	5
Shale	Brown	2	0	204	5
Clay	Gray	0	3	204	8
Shale	Red	1	8	206	4

This hole cost $301.35 or $1.46 a foot made up as follows:—

Labor	$108.75
Management	142.00
Light, oil, waste, etc	.65
Shot	2.45
Freight, truckage	37.50
Miscellaneous expenses	10.00
	$301.35

I remain,

Your obedient servant,

H. B. PICKINGS,

Deputy Inspector of Mines.

RESCUE APPARATUS, AND FIRST AID TO THE INJURED.

GLACE BAY, N. S., May 17, 1912.

HIRAM DONKIN, ESQ.,
Deputy Commissioner of Public Works and Mines,
Halifax, N. S.

DEAR SIR:—

I beg to acknowledge receipt of your favor of the 2nd inst., asking for information requested by the Commission of Conservation as to our Fire, Fighting apparatus, Rescue and First Aid equipment and organization.

We have a Central Rescue Station near our No. 2 colliery, and for a description of this I think I cannot do better than refer you to pages 98-110 of the enclosed pamphlet.

Since this matter was prepared we have added to our equipment and we have now at the No. 2 Station thirty-six Draeger apparatus, forty-two electric hand-lamps, one Bratt resuscitating apparatus, one electrically-driven oxygen refill-pump and one hand power oxygen refill-pump, one wheel stretcher with oxygen flask and mask complete, for bringing injured men out of bad air and a fully sufficient supply of oxygen and potash cartridges.

It is also our intention to open a sub-rescue station to serve the Lingan collieries, and we have now in course of shipment the equipment for this station, consisting of ten Draeger apparatus with spare cylinders, one hand-power oxygen refill, pump and one pulmotor, which is the newest and most effective form of oxygen resuscitating apparatus. We are also expecting daily a pulmotor for our No. 2 station.

It is further our intention to install a rescue station at our Springhill collieries, and we have purchased for this place ten apparatus, one refill-pump and one pulmotor with the necessary oxygen tanks and accessories.

We have not yet organized rescue brigades for the Lingan collieries or for Springhill, but as soon as the equipment arrives, we purpose to undertake this work. Constant practices are held at the Central station at No. 2 and we have now a large body of men who can use the Draeger apparatus, and who have been trained in the smoke-chamber.

As you are no doubt aware, our trained men have used the apparatus with success on two occasions, viz: at mine-fires at Sydney Mines and at Stellarton.

Presume that the questions asked in the circular accompanying your letter of the 2nd inst., referring to the stations of other companies, and to government rescue stations, will be answered by yourself, but so far as we are aware, the only other companies in Nova Scotia who have fitted up rescue stations, are the Nova Scotia Steel & Coal Company, and the Acadia Coal Company. The N. S. S. & C. Company use the Draeger apparatus and the Acadia Company use the Westfalia apparatus.

With regard to First Aid and Ambulance work, there are now several classes at the collieries being instructed in the St. John Ambulance course, and we have propertly fitted ambulances to serve all our collieries.

If there is any further information which you desire, we shall be glad to furnish it.

Yours truly,

D. H. McDougall,

Ass't. General Manager.

May 23rd, 1912.

Dominion Coal Co., Ltd.,
D. H. McDougall, Esq.,
Assistant General Manager, Glace Bay, N. S.

Dear Sir:—

I have yours of 17th instant and pampthlet enclosed therewith, for which please accept my thanks. As I have forwarded the pamphlet to the Commission of Conservation, may I add to my obligation by asking you for another copy of pamphlet for myself.

Yours truly,

Hiram Donkin.

FIRE FIGHTING ORGANIZATIONS AND EQUIPMFNT.

The Dominion Coal Company have in the past suffered severe losses through fire, both above and below ground. In 1903 a fire occurred in Dominion No. 1 Mine, and in 1906 a fire broke out in the pit bottom of the Hub Colliery. In both cases, the mine had to be flooded before the fire could be extinguished. At the Hub the surface erections were all destroyed. In October, 1906, the old bankhead at Reserve was completely destroyed by fire, and in 1908 the wash-plant at Port Morien was burnt down.

The monetary loss suffered by the company through these fires, while serious, was not so great as that occasioned through the stoppage of their operations. For some years past, the company have been perfecting a system of fire protection, and at the present time they have an admirable and effective organization.

At each colliery, the coal piers, and the shops, there is a properly constituted and officered fire-brigade, which has frequent practices. The officials of the company take an active interest in the work of the brigade, and tournaments are held annually, at which the firemen from the different collieries compete with each other in coupling contests, hose-reel races and the usual firemen's sports. Each colliery also has a building, generally known as the firemen's hall, which is set apart for the social use of the firemen in the evenings. In this building is also stored the fire-fighting equipment, which consists of fire hose, reels, rubber boots, rubber coats and sou' westers.

Each colliery has a system of fire-hydrants, and standpipes are placed throughout the bankheads and other large wooden structures with coiled fire-hose coupled up in readiness for instant use. The buildings are all supplied with chemical fire extinguishers, hung up in convenient situations.

Particualr attention is paid to the matter of cotton waste and oil. Drip pans are placed beneath all lubricating bearings and shafting in positions where the oil drips, keeping the wooden erections from becoming oil soaked, and thus dangerous as a fire risk. Cast-iron receptacles, sufficiently heavy not to be easily moved about or overturned, are provided to hold the waste. These receptacles contain two compartments, one to contain the clean waste and the other for oily waste. Loose rubbish and oily waste are not allowed to be promiscuously thrown around.

A separate building at each colliery is provided for the storage and distribution of oil. These buildings are placed in an isolated position, and buckets of dried sand are always kept near at hand.

Particular care is taken to keep live steam-pipes from coming into contact with wooden structures, and where steam-pipes pass through wooden partitions, the wood is protected by the regulation bushing. Wherever high tension electrical current passes near timber structures, instructions are given that dried sand is to be kept in a handy situation.

Similar precautions are taken underground. Where compressed air is carried into the workings, arrangements are made to allow the discharge of the mine pump or some other adequate water-supply to be turned into the air-pipes, which thus become water-mains extending into the interior of the mine. The fire-stations are plainly marked, and the underground firemen, who compose what are known as the rescue corps, are expected to know the position of these mains and connections in the same way that the surface brigades know the position of the colliery hydrants. Plans are kept on file-showing the position of all the air connections and water connections both above and below ground.

In collieries, where the workings are dusty, periodical sprinkling takes place, and in some instances the dust is swept up and taken out of the mine.

As on the surface, all the underground engine-houses are provided with chemical fire extinguishers. Special electrical rules and warnings are placed in all electrical engine houses and pump houses.

One of the most interesting features of the company's scheme of fire protection, is the central rescue station, near No. 2 colliery. There is a substantial brick building, with concrete floor, containing four rooms.

The main room of the building contains a series of wooden cabinets on which are stored the breathing apparatus, which form the equipment of the station. These are all of the Draeger type, the main features of which are a helmet, two flasks of compressed oxygen and two potash regenerator-cartridges.

The oxygen is contained in the twin cylinders at a pressure of 225 atmospheres. When released by turning the valve, it passes out through a reducing valve at a pressure of 125 atmospheres through a side tube and into the air-space of the helmet, emerging immediately in front of the mouth of the wearer. The helmet connects with two bags lying on the chest, one for the oxygenized air supply and the other for the expired air. These bags serve merely as a reservoir and to equalize the circulation. The expired air passes through a tube on the opposite side of the helmet and is passed through the regenerator cartridges. These consist of tin cylinders containing layers of finely graduated potash on shelves so arranged as to present the greatest possible superficial area of absorbing surface. The potash takes up the carbon dioxide of the expired breath, and the purified air passes through a cooler, finally joining the main oxygen stream issuing from the cylinder. The process is continuous, and the apparatus is designed to enable the wearer to work for two hours quite independently of the nature of the outside atmosphere.

The most characteristic part of the Draeger apparatus is the helmet, which is a brass mask covering the entire face and the crown of the head, but leaving the ears free. Inside it has a collaspible rubber lining, which may be inflated and deflated, in the same manner as the tire of a bicycle. By inflating the pneumatic lining the helmet can be made to fit exactly into all the hollows and curves of the facial outline, and entirely exclude the outside atmosphere. The fromt of the helmet consists of a large circular pane of mica, which affords unobstructed vision. The entire apparatus fully charged weighs about 38 pounds.

The station is equipped with 20 apparatus, and 15 auxiliary sets are kept at the collieries. The oxygen supply which is never allowed to fall below 1,000 feet, is kept in the main room in crucible-steel cylinders, each holding 100 cubic feet at a pressure of 80-atmosheres. The small cylinders of the apparatus are charged by a refill-pump, which compresses the oxygen from 80 atmospheres to 225 atmospheres, the pressure for which the apparatus is designed. Electric hand-lamps corresponding in number to the apparatus, are kept on hand in the station, already charged for immediate use. The station has a small independent charging arrangement for the lamps, the current being obtained from the colliery wires. In addition to the Drager apparatus, the station has a Konig smoke-helmet. This is a leather and mica hood connected by hose with a bellows to pump fresh air to the wearer. The hood has a mouth piece, and a receiver is held by the man operating the bellows, enabling them to speak to each other. This device is useful for work in foul air at a short distance from fresh air, such as the building of stoppings. It was bought before the station was erected.

The station is connected by telephone, on its own special circuit, with all the collieries, and by means of an extension instrument is connected with the instructor's residence, close by the station. The instructor keeps in constant touch with the central switchboard of the Coal Company's private telephone system.

Adjoining the station is the smoke-chamber for practice purposes. This is a rough wooden shed, consisting of an observation corridor divided from the main building by a partition with glass windows.

This smoke chamber, proper, has no windows, and has a fire grate in one corner on which materials are burnt to make a stifling smoke. There are two weight lifting machines for exercising, consisting of a rope passing over a pulley attached to a weight of 45 pounds. Men training in the use of the breathing apparatus enter the smoke wearing the apparatus and carrying electric lamps. Each man does a certain amount of work on the exercisers, and he thereby becomes acquainted with the working of the apparatus and its effect upon him individually. The instructor is able to guage the effectiveness of a man, as shown by his behaviour under the physical strain, and is also able to judge of the suitability of each man for the work. This training and testing process is quite necessary, as not all men are fitted to wear the apparatus or to perform the exhausting work which in case of emergency they will be called upon to do.

Recently added to the equipment of the station is a Dr. Bratt resuscitator. This is a device for inducing artificial respiration and administering oxygen. It consists of a flask of oxygen connected by a tube with a mask for the mouth and nostrils. By moving a handle to and fro the lungs of an unconscious person may be inflated and deflated as in natural breathing. The device is of special value for reviving men who have been "gassed" particularly those suffering from the carbon-monoxide poison which so frequently kills the survivors of a mine explosion. The station has also a similar arrangement mounted on a special stretcher fitted with a deep grooved wheel, which can be run along the mine rails, thus facilitating transport. By means of this device, in conjunction with the Draeger apparatus, it will be possible for a party of rescuers to penetrate into deadly gases, to revive the unconscious survivors and carry them to the outer air.

One end of the rescue-station is fitted-up as an emergency hospital and dressing room. It contains a wash-basin, spring couch, table and rubber sheet. First aid requisites, blankets and stimulants are kept on hand.

In addition to the apparatus in the central station, auxiliary apparatus are kept at some of the outlying collieries. These are intended for use by the colliery rescue corps pending the arrival of a detachment from the central station, if this should be found necessary.

The whistle signals at the different collieries, which at one time varied, have now been standardized. The ordinary whistle is used for the "work" and "no work" signals, and siren whistles only are used for fire alarm purposes. The sirens at the collieries are to be distinguished from each other by their varying pitch.

The following is the standard code of signals now in use:—

Fire in the mine—2 toots and a pause, repeated.

Fire on the surface, or in colliery buildings—3 toots and a pause, repeated.

Fire in the dwellings—One blast of siren, with a number of short blasts to indicate Ward number.

Each colliery has either two or three rescue-corps, consisting of men who are resident at the colliery and acquainted with the workings. These men are chosen because of their knowledge of the underground workings, ventilation and position of the air-roads, pipe-line and connections, but they are first of all passed by the instructor as being suitable. The names of the men composing the corps and the periods for which they are detailed for duty-are posted in the firemen's hall, near the apparatus. As far as possible, the corps are so arranged that the trained men at one colliery shall not all be underground at the same time.

The instructor makes periodical rounds and exchanges the colliery apparatus for others that he brings from the central station. This is done so that the apparatus may always be in good working order.

Up to the present time, (December 1908) there has been no call upon the central station from the company's own mines, but a detachment of 25 men in charge of the superintendent of of No. 2

district, and the instructor went to Sydney Mines on the 11th of September, 1908, and were of considerable assistance in extinguishing a fire in Sydney No. 1 Mine, which was burning at a point 2¼ miles from the pit bottom. On this occasion both the training of the men and the effectiveness of the apparatus was put to the severest test, with extremely gratifying results.

At the end of 1908 the central rescue-station of the Dominion Coal Company was the only one of its kind on the American continent, with the exception of the recently erected Experimental Station of the U. S. Geological Survey at Pittsburgh, and it is superior in the extent of its equipment and the number of trained men to any station outside of Germany or Austria.

Since the foregoing was written in 1908 the Coal Company have increased their equipment at the No. 2 Rescue Station by a Pulmotor. The Pulmotor is the latest and most successful device on the market for the recuscitation of persons suffering from suffocation by drowning, by breathing noxious gases or the effects of electric shock.

There has also been added a motor-driven oxygen-refill-pump for charging the small cylinders of the Draeger apparatus. This pump enables a large number of bottles to be charged in a short time. The hand-pump formerly used is kept as a reserve.

A Sub-station to serve the new collieries in the Lingan District has been equipped at No. 12 colliery. The building is of brick and sufficiently commodious for its purpose. The equipment of the Station consists of 10 Draeger apparatus of the 1907 type, to which various improvements have been added as suggested by the Company's experience. A hand-driven oxygen-refill-pump, Pulmotor, and the necessary spare cylinders for the oxygen reserve complete the equipment.

A station is in course of construction at the Springhill Mines of the Coal Company, which will be equipped similarly to the No. 12 Sub-station. Both stations will have attached to them a smoke-chamber for the training of workmen and officials in the actual use of the Draeger apparatus in irrespirable atmospheres.

When the full scheme is carried through, the Company will have an equipment of 56 Draeger apparatus, 4 oxygen reviving apparatus and all the numerous accessories which are required in a Rescue Station.

At the No. 2 station, the Company have for some time kept canaries as suggested by the new Mines Act now in force in England.

The Dominion Coal Company equipped their first station at No. 2 in the fall of 1907, and since that time the training of the men has been steadily going on. The training is by no means superficial, and before a man is declared efficient in the use of the apparatus, he has to prove his fitness by long and arduous practice in an atmosphere so charged with smoke and poisonous fumes as to be speedily fatal to any person not wearing the breathing apparatus.

A neighboring Coal Company, the Nova Scotia Steel & Coal Company, have equipped a Rescue Car on lines similar to the Rescue Cars of the United States Bureau of Mines, and with many admirable improvements. The Dominion Coal Company have not considered it necessary to provide such a car, as the Glace Bay mines are all within easy access of the Central Station, in addition to which, as stated in the Chapter referred to, auxiliary apparatus are kept at all the outlying collieries, which are inspected regularly by the Rescue Station superintendent, and kept in readiness for immediate use. The Lingan district is served by its own Sub-station and none of the collieries in this district are situated more than one mile from the Sub-station.

The three stations are under the direction of the Superintendent of the Central Station at No. 2 and an assistant is provided at each Sub-station.

Sydney Mines, N. S., May 8th, 1912.

HIRAM DONKIN, ESQ.,
Deputy Commissioner of Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

In reply to your favor of the 2nd inst., enclosing letter from Mr. James White, Secretary of Commission of Conservation at Ottawa, Mr. White asks three questions. We can only reply to the second, and to it only so far as our Company is concerned.

NAME OF COMPANY.

This company, the Nova Scotia Steel & Coal Company, Limited, own and operate five collieries, one blast furnace, four open-hearth steel furnaces and a railway, Sydney Mines, N. S.

RESCUE, FIRE AND FIRST AID CAR.

We have our own Rescue, Fire and First Aid Station—this station was formerly in a room in our General office-building, but is now in a railway car. This car is always held in readiness to go to any of the Collieries owned by the Company or to any other Colliery in the Province connected by rail. The car is the usual size railway passenger-car and is divided into three sections.

CAR SECTION NUMBER 1.

Section 1, is fitted and furnished for the accomodation of the rescue crew.

CAR SECTION NUMBER 2.

Section 2 is fitted with:—

16 sets of Rescue Apparatus.
24 Oxygen Cylinders.
2 Oxygen Pumps for charging Apparatus.
1 Pulmotor.
2 Dozen Electric Safety-Lamps.
1 Electric Charging Device for charging Electric Lamps.

1 Draeger Oxygen Reviving Trunk.
6 Ordinary Respirators.
Blue-print plans of all the collieries.
1 set of portable teplehones.
Canaries for gas testing purposes.

And other things likely to be necessary in the event of a mine explosion. This section also contains stretchers, splints, restoratives, oils, medicines of all descriptions likely to be necessary in case of accidents.

Car Section Number 3.

Section 3, contains fire-reels, hose, fire buckets, ladders, axes, saws, fire extinguishers, and all the necessary equipments in case of fire.

The car is furnished with blankets, cooking stove, and all articles necessary to enable the crew to live on board the car for short periods of time.

Type of Machine Used.

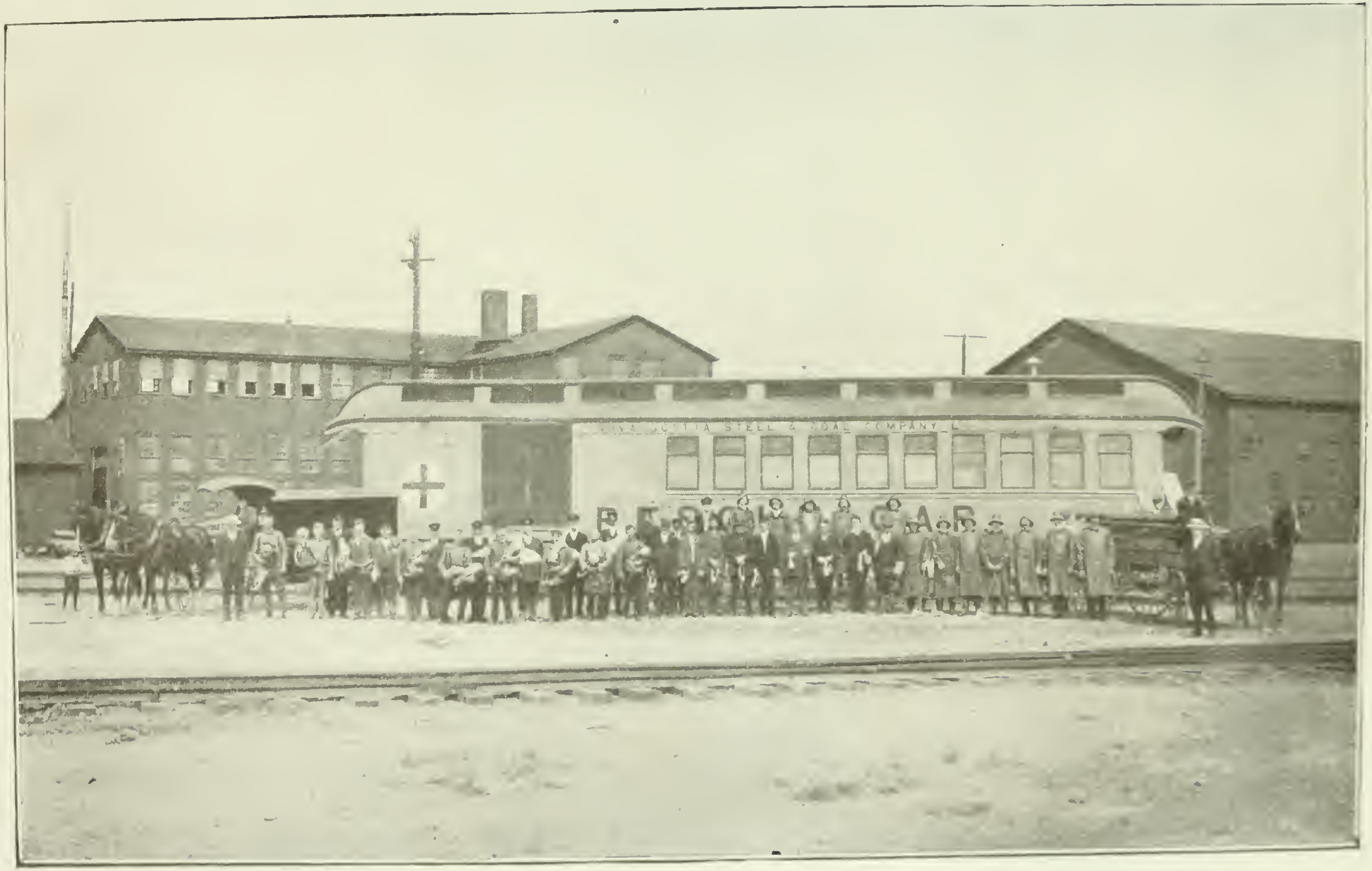
The types of rescue apparatus used are—15 of the Draeger Helmet type and one of the Ever-Ready Mouth-Piece type. These have an Oxygen capacity for about two hours effective work. Of the twenty four Oxygen Cylinders, only seven are carried in the car—the others are stored as an emergency supply. The capacity of these cylinders is 100 cubic feet, at a pressure of 125 atmospheres.

Smoke House.

In connection with our Life Saving Apparatus, we have a smoke-house built for the purpose of giving our men practice in the use of the helmets. The smoke house is centrally located, and is so built that the men while working in an obnoxious mixture can be observed at work by the head trainer, from the passage way.

Number of Rescue Men.

We have about forty men trained in the use of the Rescue Apparatus, including all the officers in connection with our collieries.



Nova Scotia Steel & Coal Company's Rescue Car.

NUMBER OF FIRST AID MEN.

We have also thirty men trained in First Aid to the Injured work—these mend o not yet hold the St. John Ambulance-Association certificates, but have undergone a thorough training in first aid, and expect to pass their examination and receive their certificates in a few days.

AMBULANCE, ETC.

We have also at each Colliery in connection with this work, an ambulance with stretchers and baskets, and in connection with the car we have a first class ambulance fully equipped with every convenience for the conveyance of injured men from the car to the hospital or their homes.

HOSPITAL.

We have a complete, fully-equipped and most modern hospital with twenty beds, with a modern up-to-date operating room and all the latest and most approved hospital appliances.

All the expenses and the cost of the equipment previously described have been borne by the Company. The hospital is however supported by the workmen and Company, and also received grants from the Government of the Province of Nova Scotia, the Town of Sydney Mines, and the County of Cape Breton.

All workmen and citizens of the town pay a regular monthly amount towards the support of this institution, and they receive hospital aid for themselves and members of their families—free of extra cost.

Yours very truly,

THOMAS. J. BROWN.

May 9th, 1912.

NOVA SCOTIA STEEL & COAL CO., LTD.,
THOS. J. BROWN, ESQ.,
General Superintendent, Sydney Mines, N. S.

DEAR SIR:—

I beg to acknowledge with thanks the receipt of your letter of 8th instant in the matter of your equipment and organization for Rescue, Fire and First Aid.

Your letter is so complete and the matter of such importance that it should have, in my opinion, the widest publicity and to that end would like permission to have the letter printed in full in the next issue of the Mines Report.

Yours truly,

HIRAM DONKIN.

Sydney Mines, N. S., May 13, 1912.

HIRAM DONKIN, ESQ.,
Deputy Commissioner of Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

With reference to my letter giving description of our Rescue, Fire and First Aid Organization:

We are having some photographs taken in connection with the organization, showing the equipment and the men at work, and when we receive these I will dress the matter up some for you, and am quite agreeable that it should appear in the Mining Report.

Yours truly,

THOMAS J. BROWN.

May 14th, 1912.

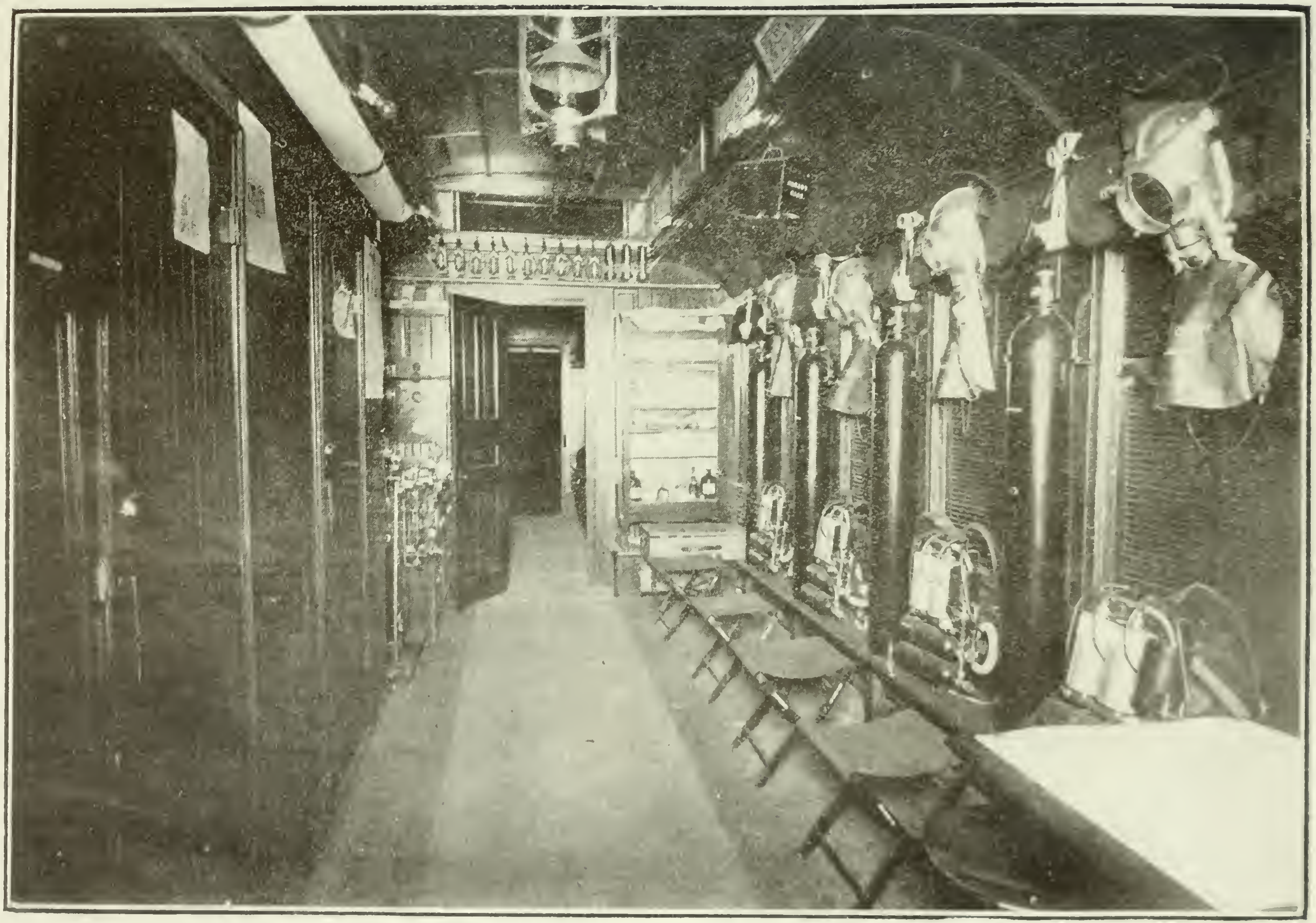
NOVA SCOTIA STEEL & COAL CO., LTD.,
T. J. BROWN, ESQ.,
General Superintendent, Sydney Mines, N. S.

DEAR SIR:

I have yours of 13th instant, I shall be very glad to get the photos and thank you for permission to use your communication in the next issue of the Mines Report.

Yours truly,

HIRAM DONKIN.



Interior Rescue-Car, Nova Scotia Steel & Coal Company

Sydney Mines, N. S., Sept. 18, 1912.

H. DONKIN, ESQ.,
Deputy Commissioner Public Works, & Mines,
Halifax, Nova Scotia.

DEAR SIR:

On the 8th of November last I sent you a description of our rescue car. Since that time we have had the pleasure of showing you the car and its contents. Both the Commissioner and yourself have intimated that you would like to use this information in connection with your yearly report.

This is to say that you are at perfect liberty to do so, and I now beg to enclose you a photograph showing the car and some of our First-Aid-to-the-Injured Corps, Draeger Rescue-Corps and Firemen, together with our hose waggon and road ambulance.

I am also pleased to tell you that twenty-four of the officers of our collieries have been successful in securing the St. John Ambulance Association certificate to render first aid to the injured. I am enclosing you the names and the occupation of the men who secured these certificates.

I think as an encouragement to them and courtesy to our Company being the first Company we know of, with the exception perhaps of the C. P. R., to take steps of this kind, that you would likely incorporate these names and the fact that they had obtained certificates in your annual report. The following are the names.

Yours very truly,

THOS. J. BROWN.

Archie Ferguson, manager Scotia colliery.

Robert Dickson, underground manager Scotia colliery.

Fred McDonald, overman, Queen colliery.

William R. Call, overman Lloyds colliery.

William Campbell, surface foreman, Florence colliery.

George W. Greenwell, Assistant Supt. of Mining.

John W. Johnston, manager Princess colliery.

Francis Ferguson, overman Princess colliery.

Robert Robertson, manager Queen Colliery.

Alexander Boyde, surface foreman Queen colliery.

John Hunter, overman Florence colliery.

George Slavin, overman Queen colliery.

Duncan Jardine, overman Princess colliery.

James D. Colburn, overman Princess colliery.

David Brown, underground manager princess.

William Robinson, Labor Foreman, (I. & C. Dept.)

John Hill, underground manager Florence.

Thomas Jardine, surface foreman Scotia.

William Tobin, manager Lloyd's colliery.

Daniel Brown, underground manager Lloyd's.

Alexander McDonald, underground manager Queen colliery.

Angus Ferguson, manager Florence colliery.

William Edward Oram, surface foreman Princess colliery.

Andrew Baillie, overman Queen colliery.

Sept. 21, 1912.

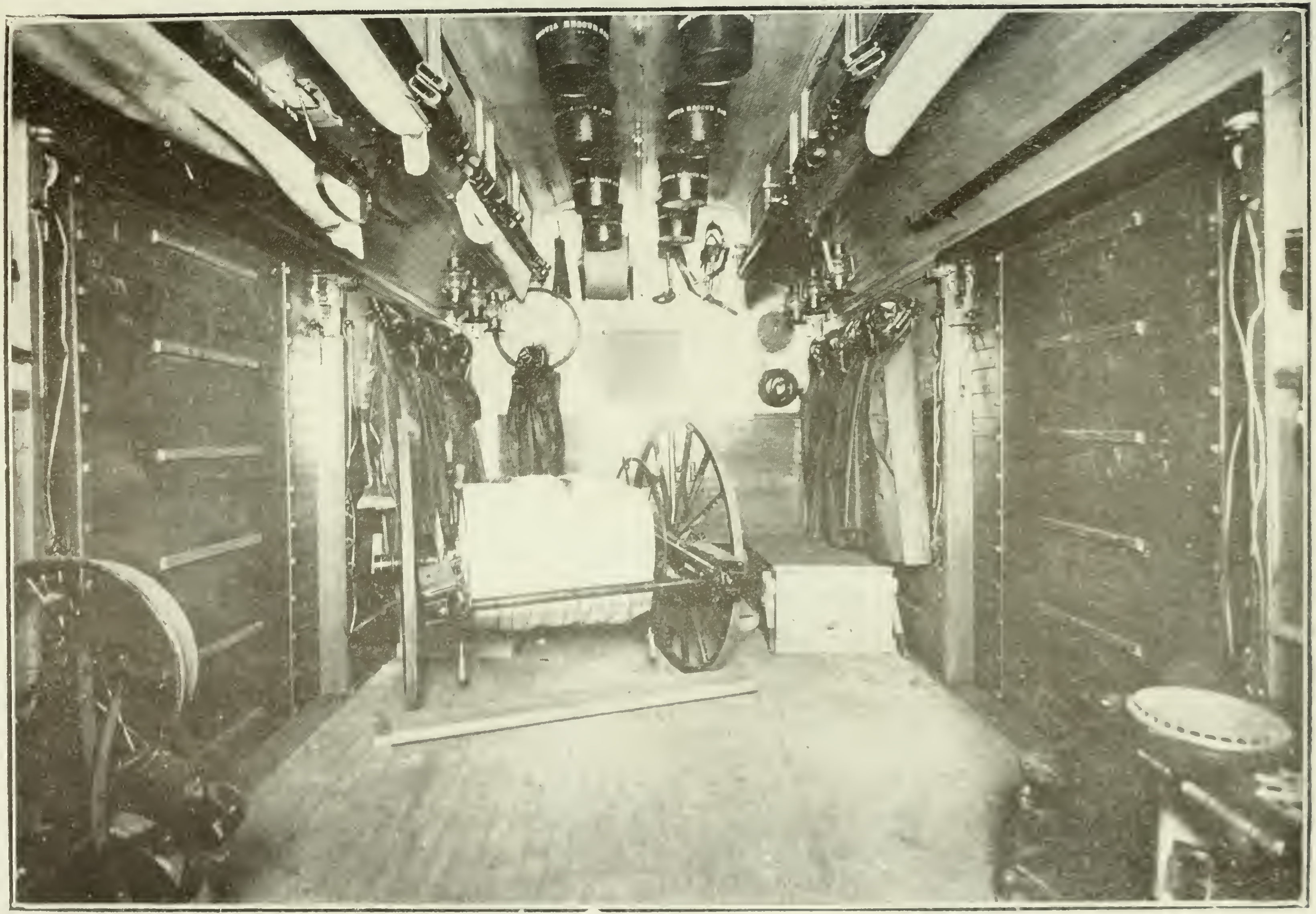
NOVA SCOTIA STEEL & COAL CO., LTD.,
THOS. J. BROWN, ESQ.,
General Superintendent, Sydney Mines, N. S.

DEAR SIR:—

I thank you for your letter of the 18th inst., referring to your Rescue Car, also photograph showing car and some of your First-Aid-to-the-Injured Corps, Draeger Rescue-Corps and Firemen, &c., and on floor plan and side elevation of car. The Hon. Commissioner read your letter with much interest and desires me to say that it will give him pleasure to see the names of the twenty four officers of your collieries who have been successful in securing the St. John Ambulance Association Certificate made a part of the Report for this year.

Yours truly,

HIRAM DONKIN.



Interior Rescue Car, Nova Scotia Steel & Coal Company.

Sydney Mines, N. S., Nov. 22, 1912.

MR. HIRAM DONKIN,
Deputy Commissioner Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

I am sending you by to-day's mail two pictures of the inside of our Rescue Car. I am in hopes they will be in time to insert in your report of same in your annual report.

You might be kind enough to return them to me after they have served your purpose.

Yours truly,

THOS. J. BROWN.

Nov. 25, 1912.

NOVA SCOTIA STEEL & COAL CO., LTD.,
THOS. J. BROWN, ESQ.,
General Superintendent, Sydney Mines, N. S.

DEAR SIR:—

I have yours of 22nd inst., and the two photos of the inside of your Rescue Car.

Copies of these photos will be published in the Mines Report for 1912 and the photos returned to you.

Yours very truly,

HIRAM DONKIN.

Stellarton, Nova Scotia, September 19th, 1912.

MR. HIRAM DONKIN,
Deputy Commissioner of Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

On May 10th, we wrote you in reply to yours of May 3rd on the subject of our rescue apparatus.

At that time we promised you photographs of this building, which we now beg to notify you, we are sending you under separate cover. With them is also a blue print showing the general arrangement of this station.

The apparatus room is used for the storage of the materials and for the delivering of lectures on their use. An interior view of this room is being sent you.

The training-room has no floor, it is directly connected with a small room in which we have a furnace for making a "smudge." In this training room we have a quantity of rock, timber, etc., and into it the men are put in order to become accustomed to working with the helmets. It is our intention to introduce them into this room before sending them into the mine, whenever the occasion arises for the use of the apparatus underground. In this room we will put a number of obstacles to simulate as much as possible, underground conditions, so that the men will have become accustomed in crawling on their hands and knees, and will understand the necessity of protecting the apparatus on their back's from injury.

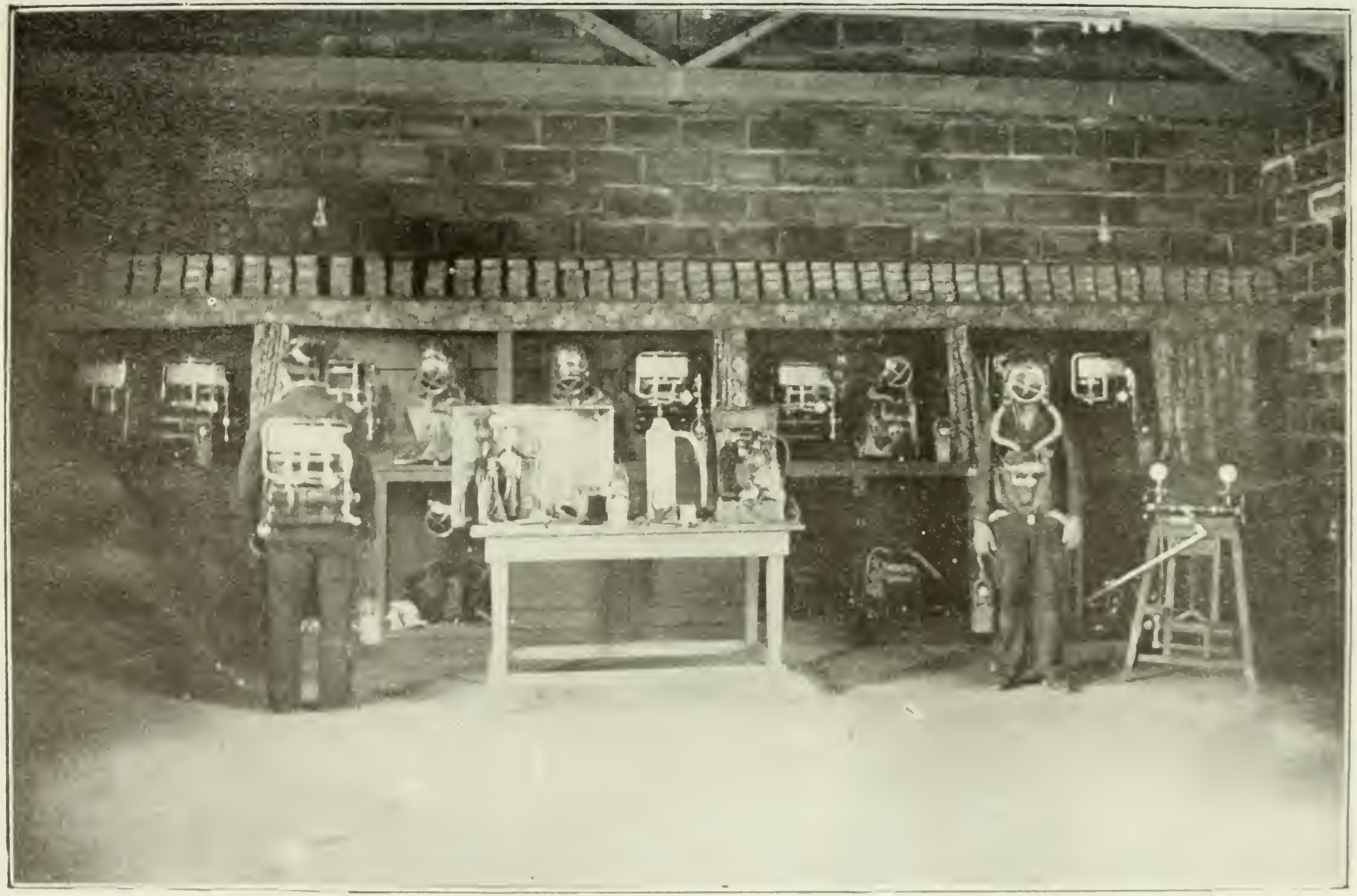
The exterior view which we are sending shows the wash-house as well as the rescue station. This wash-house is not yet, equipped, but will be fitted up during the coming winter.

Trusting this is satisfactory, we remain,

Yours very truly,

CADWALLADER EVANS.

General Manager.



Interior Rescue Station Acadia Coal Company, Ltd.

Sept. 21, 1912.

THE ACADIA COAL CO., LTD.,
CADWALLADER EVANS., ESQ.,
General Manager, Stellarton, N. S.

DEAR SIR:—

I wish to thank you for your letter of Sept. 19th, enclosing photographs of your building for the storage and training in the use of your rescue apparatus, and also blue print showing the general arrangement of this station.

I shall have pleasure in making the literature you have given me, and also the photographs as far as possible, a part of the Mines Report for this year.

Yours very truly,
H. DONKIN,
Inspector of Mines.

Stellarton, Nova Scotia, May 10th, 1912.

HIRAM DONKIN, ESQ.,
Deputy commissioner of Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

Replying to yours of May 2nd on the subject of our Rescue Apparatus, we beg to say that we have 10 outfits provided with helmets and each having 2 Oxygen bottles attached. These bottles are supposed to supply fresh air for 2 hours. They are of the type known as "Securitas" and are very similar to the "Draeger."

With each outfit, we have an electrical hand-lamp and also have provided a number of spare oxygen bottles and the device for charging them, as well as a supply of the absorption cartridges intended to take up the CO 2 given off by the workmen.

We have also an artificial breathing apparatus, as manufactured by Dr. Bratt.

We have a training-house, in which to instruct our men, consisting of a room about 20 by 40 feet in which the apparatus is installed, and lessons are given, and a smoke-room of about the same size, into which we put the men in order to test the security of their helmets before they go into the mine. In this smoke-room, we have means provided for creating a dense smudge, and intend in the future to have in it a number of obstacles to simulate the interior of the mine, so that the men can be trained in climbing, etc., before they are sent underground.

Our rescue crews are made up of 6 men each, and we plan to give each crew a training of about 10 lessons immediately after they volunteer in order to perfect them, and then have them meet regularly once a month in order that they may remain familiar with the apparatus and be ready for instant call.

Trusting that this will be satisfactory, I remain,

Yours very truly,

CADWALLADER EVANS,

General Manager.

May 13th, 1912.

ACADIA COAL CO., LTD.,
CADWALLADER EVANS, ESQ.,
General Manager, Stellarton N. S.

DEAR SIR:—

I have yours of 10th instant giving description of your Rescue Apparatus for which please accept my thanks.

I shall be grateful to you if you will give me permission to make your letter a part of the next issue of the Mines Report.

Yours truly,

HIRAM DONKIN.

Stellarton, Nova Scotia, May 17, 1912.

HIRAM DONKIN, ESQ.,
Deputy Commissioner of Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

We beg to acknowledge receipt of yours of May 13th, and note your desire to use the description which we gave you of our Rescue Apparatus in the next issue of your Mines Report.

We will only be too glad to have you make any use you care of this information, and would say that if your desire any further data which may be available before the 1912 Report is published, we will be glad to supply it to you upon request.

Yours truly,
CADWALLADER EVANS,
General Manager.

Blace Bay, N. S., Canada,
2nd December, 1912.

HIRAM DONKIN, ESQ.,
Deputy Commissioner Public Works & Mines,
Halifax, N. S.

DEAR SIR:—

Referring to my letter of the 28th ult., I enclose you herewith memorandum to supplement Chapter VIII in the pamphlet descriptive of the Dominion Coal Co., which I trust will give you the information required.

Yours truly,
J. W. GRAY,
Chief Clerk.

Successful Candidates, Mining Examinations, 1912

Certificates of Competency and Certificates of Service were granted to the following applicants, after the annual examinations, for recommending certificates for managers, underground managers, overmen, and engineers, held in July 1912.

UNDERGROUND MANAGERS, COMPETENCY.

Daniel L. Johnson	Dominion,	Cape Breton
John W. Quinn	Glace Bay	“ “
David A. Robertson	Sydney Mines	“ “
Angus J. McCuish	Bridgeport	“ “
William Slade	Dominion No. 6	“ “
David Gouthro	Reserve Mines	“ “
James H. Canavan	MacKay's Corner	“ “
Henry Ward Clarke	Reserve Mines	“ “
William D. Haley	New Waterford	“ “
Peater J. McKay	Inverness	“ “
Kenneth B. Foyster	Sydney	“ “

OVERMEN, COMPETENCY.

Peter Baxendale	Sydney Mines	“ “
William Blakey	Dominion No. 6	“ “
John W. McLeod	Port Morien	“ “
Arthur Rivett	Caledonia Mines	“ “
Dennis Pendergast	New Waterford	“ “
Mark Allan Atkinson	New Aberdeen	“ “
Edward John McLeod	Reserve Mines	“ “
George McEachern	Glace Bay	“ “
John W. Kehoe	Reserve Mines	“ “
George Wilbert Petrie	Reserve Mines	“ “
William R. Cameron	New Aberdeen	“ “
John James McDonald	Birch Grove	“ “
Alexander J. Currie	MacKay's Corner	“ “
George Nesbitt Reid	Westville	
William F. Campbell	Springhill	
Alex. C. Morris	“	
Frank Dieltgens	Joggins Mines	
Thomas Barton	River Hebert	
Joseph Barton	“ “	

ENGINEERS.

Ronald J. Black,	Competency,	1st Class,	Glace Bay, C. B.
Angus L. Campbell	“	“	Ball's Creek, “
Murdoch Robertson	“	“	Glace Bay “
Jabez Cann	“	“	Sydney Mines “
John J.W.McKinnon	“	“	Glace Bay “
Augustine D. Francis	“	“	Sydney Mines “
William F. Way.	“		Sydney Mines “
William Nicholson	“		Caledonia Mines
James H. Mann	“		Sydney Mines “
John Glen Grant	Service,	1st Class	Glace Bay “
Edwin R. Gillmore	“	“	Sydney Mines “
John A. Fraser	“	“	Point Edward

Wallace Peters,	Competency	2nd Class	Glace Bay “
Charles McVicar	“	“	Caledonia Mines
Edwin M. Bezanson	“	“	Glace Bay “
Allan J. McDonald	“	“	Port Morien “
Donald J. Nicholson	“	“	Birch Grove “
James McVicar	“	“	Glace Bay “
John Leo McNeil	“	“	Port Morien “
William Phalen	“	“	Port Morien “
James H. Wier	“	“	New Aberdeen “
Dan McLean	“	“	Caledonia Mines
Murray B. Dickson	“	“	Louisburg “
Ewen Hillier	“	“	Caledonia Mines
Bennie Edwards	“	“	New Aberdeen “
Dan W. Ferguson	“	“	Caledonia Mines
John Nicholson	“	“	Caledonia Mines
Ronald McDonald	“	“	Caledonia Mines
John H. McDonald	“	“	Birch Grove “
William Jones	“	“	Reserve Mines
John McInnis	“	“	Springhill
Eugene Melanson	“	“	Joggins Mines
Frank Worsley	“	“	Stellarton
John J. Hillier	“	“	New Glasgow
Maurice MacDonald	“	“	Thorburn

Charles R. Hillier	Competency,	3rd Class	New Waterford
John A. McDonald	“	“	Glace Bay
Alex. McNeil	“	“	Bridgeport
Patrick Musie	“	“	New Waterford
Alex. McLeod	“	“	Glace Bay
James Taylor	“	“	Marconi Station
William E. Morrison	“	“	Glace Bay
Martin Reynolds	“	“	Mill Creek
Harry McKenzie	“	“	Reserve Mines
Arthur G. Illidge	“	“	Glace Bay

Wilfred J. Andrews,	Competency	3rd Class,	Dominion No. 6
Richard Devine	“	“	Sydney Mines
Paul Baxendale	“	“	Sydney Mines
John Jones	“	“	Sydney Mines
Andrew Henarietha	“	“	Glace Bay
Richard Wilson	“	“	Sydney Mines
Henry Lewis.	“	“	Glace Bay
Hector J. McDonald	“	“	Glace Bay
Archie McInnis	“	“	Joggins Mines
Stephen Faulds	“	“	Chignecto
Earnold Burke	“	“	Joggins Mines
Clarence H. Brown	“	“	West River Hebert
Sidney McCarther	“	“	West River Hebert
John Carter	“	“	Westville
Isaac Simpson	“	“	Westville
Dan Angus McDonald	“	“	Thorburn
Wilkie Borden	“	“	Westville
Willard McNeil	“	“	Westville
Fidele S. Comier	“	“	Eastern Harbor
Charles L. AuCoin	“	“	“ “
Dan L. Chaisson	“	“	“ “
Philip LeLeivie	“	“	“ “

John C. Musie	Service	3d. Class	Reserve Mines
Freeman Curry	“	“	Port Morien
James McLean	“	“	Bear Big Pond
George E. Fletcher.	“	“	Wentworth Creek Hants

TABLES.

COAL.

GENERAL STATEMENT, 1912.

	Production	Sales.	Colliery Consumption	Workmen
1st Quarter	1,658,553	1,465,183	129,022	31.568
2nd Quarter	1,581.933	1,096,797	143,746	39,993
3rd Quarter	1,779,931	1,726,357	136,016	19,376
4th Quarter	1,782,580	1,889.278	129,247	15,571
	6,802,997	6,177,615	538,031	106,508

COAL.

Production and Sales by Nova Scotia Collieries for fiscal year ended September 30th, 1912.

NAME OF COMPANY.	Total Output Tons	Total Sales Tons	Per cent. of Output	Colliery Consumption	Per cent. of Output	Supplied Workmen Tons	Per cent. of Output	Supplied Locomotives Tons	Per cent. of Output	Total per cent. of Output	Reported unsalable or waste	Tons on bank at close of year	Difference on Bank	
													Inc.	Dec'se
Dominion Coal Company, Ltd.	4,332,320	4,011,235	91.6	235,799	5.44	46,434	1.07	25,940	. 6	98.7	......	68,325	...	44,032
Nova Scotia Steel & Coal Company, Ltd	821,165	777,889½	93.5	34,279¾	4.17	18,757	2.28	4,042	.49	100.	......	24,894¾	...	13,803¼
Cumberland Railway & Coal Company, Ltd.	420,481	346,964	82.4	58,379	13.8	11,468	2.7	4,284	1. 1	100.	......	6,234	...	614
Acadia Coal Company	439,476	359,252	79.6	76,542	17.4	11,301	2.6	1,674	0. 4	100.	......	10,795	...	9,293
Maritime Coal Railway & Power Co,	151,308	126,164	83.4	21,825	14.4	3,319	2.2	507	0. 3	100.	......	....	...	....
Inverness Railway & Coal Company	289,704¼	259,315	89.0	19,097½	6.6	5,993¼	2.7	8,884½	3.06	97.7	......	1,518¾	...	1813
Intercolonial Coal Company	243,407	211,898	82.9	33,983	14.0	6,941	2.8	677	0. 3	100.	......	1,078	...	10,092
Sydney Coal Company	4,592	4,727	94.8	84	1.8	153	3.4	....	......	100.	......	21	...	372
Colonial Mining Co.	35,221	30,525	86.7	4,132	11.7	564	1.6	....	......	100.	......	359	...	....
North Atlantic Collieries Company	4,303	378½	0.8	4,038	93.8	230½	5.4	....	......	100.	......	....	...	344
Minudie Coal Company	60,874	49,162	80.8	3,628	6.0	1,315	2.1	227	0. 4	88.9	6,769	....	...	....
Atlantic Grindstone & Coal Company	146	105	71.9	9	6.1	32	22.	....	......	100.	......	....	...	....
Totals	6,802,997½	6,177,615	89.6	491,796¼	7.23	106,507¾	1.56	46,235½	*0.54	98.9	......	113,225½	...	80,363¼

COAL SALES BY COUNTIES, YEAR ENDED SEPTEMBER 30th, 1912.

Destination.	Cape Breton	Pictou	Cumberland	Inverness	Totals.
Nova Scotia............By Land	1,352,610	392,172	112,659	104,356¼	....
Nova Scotia............By Sea	245,819¼	30,401	25,216	32,129½	....
Nova Scotia............Totals	1,598,429¼	422,573	137,875	136,485¾	2,295,363
New Brunswick................	308,227	64,199	259,108	21,804¼	653,938¾
Newfoundland................	200,642	....	....	....	200,642
Prince Edward Island...........	38,256½	37,295	....	16,750¾	92,302¼
Quebec........................	2,003,364¾	39,556	42,074	74,010¼	2,159,005
United States..................	334,860	....	77,671	....	412,531
St. Pierre......................	9,123	....	283¾	....	9,406¾
Other Countries...............	91,825	....	....	....	91,825
Bunker	219,462½	7,527	3,222	6,522¼	236,733¾
Time Charter Boats............	20,565	....	1,845	3,457½	25,867½
	4,824,755	571,510	522,678¾	259,032¼	6,177,615

PRODUCTION OF COAL BY COUNTIES.

COUNTIES	1908	1909	1910	1911	1912
Cumberland	559,013½	542,040	277,862	411,695	632,809
Pictou	776,857	677,637	630,049	727,944	682,883
Inverness	402,654½	362,516	364,104	332,779	289,704¼
Cape Breton	4,556,446	3,634,392	4205,131	4,736,026	5,197,601
Colchester	3,951	1,330			
	6,299,282	5,217,915	5477,146	6208,444	6,802,997¼

NUMBER AND CLASSES OF WORKMEN EMPLOYED AT EACH MINE IN NOVA SCOTIA, YEAR ENDED SEPTEMBER 30, 1912.

	Underground.				Surface				Construction				Totals		Horses		Dys.
	Skilled Labor.	Laborers.	Boys.	Days	Skilled Labor.	Laborers.	Boys.	Days.	Skilled Labor.	Laborers.	Boys.	Days.	Persons.	Days.	Above.	Below.	Pit Days.
Dominion Coal Company	3029	1930	240	1468063	586	425	60	303863	....	....	....	.....	6270	1771926	94	536	282
Nova Scotia Steel & Coal Company	1022	841	186	542622	143	226	24	117472	....	....	....	.....	2442	660094	1	22	306
Cumberland Ry. & Coal Company	444	369	40	256431	81	119	9	63273	9	10	....	5490	1081	325194	10	59	300
Acadia Coal Company	359	373	64	246377	108	304	20	150239	....	....	....	.....	1228	396616	38	43	296
Intercolonial Coal Company	401	126	84	155529	108	110	28	68550	3	4	....	1586	864	225665	10	59	300
Joggins Mines	333	66	3	102430	19	48	9	20882	....	....	....	.....	478	123312	4	9	299
Chignecto Mines	28	21	3	13338	14	16	3	7408	....	....	....	.....	85	20746	1	1	296
Inverness Ry. & Coal Company	310	134	23	139182	47	47	13	31573	....	....	....	.....	574	170755	7	33	297
Sydney Coal Company	8	3	....	1624	2	2	....	629	....	....	....	.....	15	2253	1	1	260
MacKay Mining Company	41	14	....	15876	6	11	1	5326	2	1	....	1060	76	22262	3	6	304
Minudie Coal Company	94	22	14	36808	15	16	5	10194	3	....	....	922	169	47924	3	2	292
Colonial Coal Company	5	....	....	1456	4	....	....	1302	3	3	....	1725	15	4483	1	1	306
Totals	6074	3899	657	2979736	1133	1324	172	780711	20	18	....	10783	13297	3771230	173	772	

COAL.

NOVA SCOTIA EXPORTED TO THE UNITED STATES:

Years.	Tons.	Duty.	Years.	Tons.	Duty.
1850	118,173	24 ad.	1879	51,641	.75
1851	116,274	“	1880	123,423	“
1852	87,542	“	1881	113,728	“
1853	120,764	“	1882	99,302	“
1854	139,125	Free	1883	102,755	“
1855	103,222	“	1884	64,515	“
1856	126,152	“	1885	34,483	“
1857	123,335	“	1886	66,003	“
1858	186,743	“	1887	73,892	“
1859	122,720	“	1888	30,198	“
1860	149,289	“	1889	29,987	“
1861	204,457	“	1890	50,854	“
1862	192,612	“	1891	25,431	“
1863	282,775	“	1892	13,883	“
1864	347,594	“	1893	16,099	“
1865	465,194	“	*1894	79,837	.40
1866	404,252	“	†1895	73,097	“
1867	338,492	$1.25	‡1896	174,919	“
1868	228,132	“	||1897	106,279	.67
1869	257,485	“	1898	98,027	“
1870	168,180	“	1899	153,188	“
1871	165,431	“	1900	624,273	“
1872	154,092	.75	1901	591,086	“
1873	254,760	“	1902	751,382	“
1874	138,336	“	1903	968,832	“
1875	89,746	“	1904	713,170	“
1876	71,634	“	1905	652,538	“
1877	118,216	“	1906	769,775	“
1878	88,495	“	1907	616,312	“
			1908	499,634	“
			1909	324,786½	“
			1910	290,668	“
			1911	332,301	“
			1912	412,531	“

Note—The quantities given for the years 1852 to 1872 are on the authority of the Board of Trade, Philadelphia, and are probably underestimated.

*Nine months only.

†*Note.*—After August 1st, 1894, duty on Round Coal, 40 cents, on Culm and Slack, 15 cents.

‡Fiscal year begins Oct. 1st, and ends Sept. 30th. [Chap. 4, Acts 1893].

|| On July 24th, 1897, the duty was made 67 cents.

[NOVA SCOTIA COAL SALES 1785 TO 1912 INCLUSIVE.]

Year.	Sales.	Total.
1785	1,668	
1786	2,000	
1787		
1788		
1789	10,681	
1790		14,349
1791	2,670	
1792	2,143	
1793	1,926	
1794	4,405	
1795	5,320	
1796	5,249	
1797	6,039	
1798	5,948	
1799	8,947	
1800	8,400	51,048
1801	5,755	
1802	7,769	
1803	6,601	
1804	5,976	
1805	10,130	
1806	4,938	
1807	5,119	
1808	6,616	
1809	8,919	
1810	8,609	70,452
1811	8,516	
1812	9,570	
1813	9,744	
1814	9,866	
1815	9,336	
1816	8,619	
1817	6,284	
1818	7,920	
1819	8,692	
1820	9,930	91,527
1821	11,308	
1822	7,512	
1823..		
1824	27,000	
1825..		
1826	,600	
1827	2,149	
1828	20,967	
1829	21,935	
1830	27,269	140,820
1831	37,170	
1832	50,362	
1833	64,743	
1834	50,813	
1835	56,434	
1836	107,593	
1837	118,942	
1838	106,730	
1839	145,962	
1840	101,198	839,954
1841	148,298	
1842	129,708	
1843	105,161	
1844	108,482	
1845	150,674	
1846	146,506	
1847	201,650	
1848	187,643	
1849	174,592	
1850	180,084	533,798
1851	152,499	Forward,2,741948
1852	188,076	
1853	217,116,	
1854	234,812	
1855	238,215	
1856	253,492	
1857	294,198	
1858	226,725	
1859	270,293	
1860	322,593	2,399,319
1861	326,426	
1862	395,637	
1863	429,351	
1864	576,935	
1865	635,186	
1866	558,523	
1867	471,185	
1868	453,624	
1869	511,795	
1870	568,277	4,927,339
1871	596,418	
1872	785,914	
1873	118,106	
1874	749,127	
1875	706,795	
1876	634,200	
1877	697,666	
1878	693,511	
1879	688,628	
1880	954,659	7,317,430
1881	1,035,014	
1882	1,250,176	
1883	1,297,523	
1884	1,261,650	
1885	1,254,510	
1886	1,373,666	
1887	1,519,684	
1888	1,576,692	
1889	1,555,107	
1890	1,786,111	13,810,136
1891	1,849,945	
1892	1,752,934	
*1893	1,485,914	
†1894	2,019,742	
1895	1,831,357	
1896	2,047,133	
1897	2,013,421	
1898	2,135,397	
1899	2,419,137	
1900	2,997,546	20,552,526
1901	3,119,335	
1902	3,898,626	
1903	4,621,074	
1904	4,544,609	
1905	4,475,284	
1906	5,194,590	
1907	5,046,690	
1908	5,485,583	
1909	4,615,713	
1910	4,896,896	45,898,400
1911	5,556,464	
1912	6,177,615	

SUMMARY:

1785 to 1790	14,349	1841 to 1850	1,533,798
1791 to 1800	51,048	1851 to 1860	2,399,319
1801 to 1810	70,452	1861 to 1870	4,927,339
1811 to 1820	91,527	1871 to 1880	7,317,430
1821 to 1830	140,820	1881 to 1890	13,910,136
1831 to 1840	839,954	1891 to 1900	20,552,526
		1901 to 1910	45,898,400

*Nine months only. †Fiscal year begins Oct. 1st and ends Sept. 30th. [Chap. 4, Acts, 1893].

GOLD—*General Annual Statement.*

Year.	Material Crushed.	Total Gold Extracted.		
		Oz.	Dwt.	Gr.
1862	6473	7275	0	0
1863	17002	14001	14	17
1864	21434	20032	18	13
1865	24423	25454	4	8
1866	32162	25204	13	2
1867	31386	27314	11	11
1868	32262	20541	6	10
1869	35147	17868	0	19
1870	30829	19866	5	5
1871	30791	19227	7	4
1872	17093	13094	17	6
1873	17708	11852	7	19
1874	13844	9140	13	9
1875	14810	11208	14	19
1876	15490	12038	13	18
1877	17369	16882	6	1
1878	17990	12577	1	22
1879	15936	13801	8	10
1880	14037	13234	0	4
1881	15556	10756	3	2
1882	12081	14107	13	20
1883	25954	15446	9	23
1884	25147	16059	8	17
1885	28890	22202	12	20
1886	29010	23362	15	13
1887	22280	21211	7	18
1888	36178	22407	13	10
1889	39160	26155	6	13
1890	42749	24358	9	9
1891	35212	23391	0	0
1892	33633	21080	3	18
*1893	28040	14030	5	7
1894	39333	14980	7	13
1895	58082	22112	7	21
1896	65873	25596	14	6
1897	76559	26579	19	21
1898	86331	31104	17	0
1899	104122	27772	12	3
1900	65744	30399	4	14
1901	87992	30537	14	0
1902	192076	28279	5	13
1903	92645	25198	4	18
1904	62616	14279	8	14
**1905	72252	16782	11	5
**1906	65278	14079	13	23
**1907	66060	15007	5	8
**1908	59797	11991	0	0
1909	59058	12597	12	13
**1910	49558	10676	3	16
**1911	18319	8389	12	4
1912	15868	4948	19	20
	2117639	936499	10	0

*Nine months only.

**Including Gold from Stibnite ore shipped from West Gore.

Production of Gold from 1862 to 1912.

DISTRICT	TONS	Total yield of Gold			Average yield of Gold the Ton			Value at
	Crushed	Oz.	dwt	grs	Oz.	dwt.	grs.	$19 an Oz.
*Caribou and Moose River	220027	60196	2	19		5	11	1143727
Montagu	29523	42173	3	6	1	8	14	801290
Oldham	58735	67343	2	22	1	2	22	1279520
Renfrew	61319	48508	8	19		15	20	921660
Sherbrooke	300213	153090	1	4		10	5	2908711
Stormont	525237	120549	18	13		4	14	2290448
Tangier	64112	28230	15	19		8	20	536385
† Uniacke	63351	43983	1	17		13	21	835679
Waverley	155520	69980	10	16		9	0	1329630
‖Brookfield	93527	38709	2	2		8	7	735473
‡Salmon River	118819	41852	5	20		7	1	795193
×Whiteburn	6907	9800	0	2	1	8	12	186200
Lake Catcha	29637	27468	10	9		18	13	521902
¶Rawdon	12189	9606	5	10		15	18	182519
Wine Harbour	77396	34992	15	11		9	1	664863
**Fifteen Mile Stream	36878	17363	0	5		9	10	329897
Malaga Barrens	22926	20305	12	6		17	17	385807
xWest Gore (from Stibnite Ore)	3240	4512	15	10	1	7	20	85743
Other Districts	143558	74959	8	19		10	11	1424229
Total	2023114	913625	1	13		8	19	$173,588.76

*Form 1869 †From 1868 ‡From 1883 ‖From 1887 ×From 1882 ¶From 1887 **From 1883 xFrom 1905.

GENERAL GOLD STATEMENT—YEAR ENDED SEPTEMBER 30, 1912.

District.	Tons Crushed	Total Yield of Gold			Average Yield of Gold this Year.		
		oz.	dwt.	grs.	oz.	dwt.	grs.
Beaver Dam	99	59	10	0	......	12	0
Carleton	10	1	0	0	......	2	0
Caribou	1367	984	14	0	......	14	10
Caribou [Moose River]	1013	330	5	13	......	6	12
Fifteen Mile Brook	225	21	1	5	......	1	21
Gold River	36	27	3	0	......	15	2
Harrigan Cove	[Mortared]	2	10	0	......	......	....
Lake Catcha	1572	161	19	2	......	2	1
Lawrencetown	[Mortared]	1	17	0	......	......	....
Oldham	314	127	5	0	......	8	3
Pleasant River Barrens	30	12	0	0	......	8	0
Renfrew	2908	1182	11	0	......	8	3
Shiers Point	171	69	10	0	......	8	3
Stormont	4263	806	3	0	......	3	19
Tangier	3850	1161	9	0	......	6	1
Uniacke	10	.....	2	0	......	......	5
Totals	15868	4948	19	20	......	6	5

MONTHLY STATEMENT FOR EACH GOLD DISTRICT.

Month.	STORMONT					TANGIER				
	No. of Mines	Tons Crushed	Yield of Gold			No. of Mines	Tons Crushed	Yield of Gold		
			Oz.	dwt	grs			oz.	dwt	grs
1911										
October	2	719	124	0	0	No	Crush	ing		
November	1	100	37	0	0	No	Crus	ing		
December	2	416	55	6	0	No	Crus	hing		
1912										
January	1	400	95	18	0	No	Crus	hing		
February	1	304	67	17	0	1	750	291	0	0
March	1	325	56	2	0	1	700	234	10	0
April	1	375	76	15	0	1	700	235	8	0
May	1	370	94	18	0	1	650	157	12	0
June	1	353	78	14	0	1	650	152	10	0
July	1	294	49	16	0	No	Crus	hing		
August	1	349	40	3	0	No	Crus	hing		
September	2	258	29	14	0	1	400	90	9	0
Total	......	4263	806	3	0	......	3850	1161	9	0

MONTHLY STATEMENT FOR EACH GOLD DISTRICT.

Month	CARIBOU					CARIBOU [Moose River]				
	No. of Mines	Tons Crushed	Yield of Gold			No. of Mines	Tons Crushed	Yield of Gold		
			oz.	dwt	grs			oz.	dwt	grs
1911										
October...........	1	86	64	0	0	1	103	54	7	9
November.........	1	156	136	15	0	2	198	37	9	9
December.........	1	130	93	6	0	No	Crus	hing		
1912										
January...........	1	240	180	3	0	No	Crus	hing		
February..........	1	225	156	0	0	No	Crus	hing		
March............	1	265	224	12	0	No	Crus	hing		
April..............	No	Clean	up			No.	Crus	hing		
May..............	1	110	28	10	0	1	61	30	11	14
June..............	1	60	64	4	0	2	84	26	14	0
July..............	1	55	21	16	0	3	309	51	14	5
August............	1	40	15	8	0	2	137	52	2	5
September.........	No	Clean	up			2	121	77	6	19
Total.........	......	1367	984	14	0	......	1013	330	5	13

MONTHLY STATEMENT FOR EACH GOLD DISTRICT.

	RENFREW.					OLDHAM.				
Month.	No. of Mines	Tons Crushed	Yield of Gold			No. of Mines	Tons Crushed	Yield of Gold		
			oz.	dwt	grs			oz.	dwt	grs
1911										
October	1	275	100	2	0	No	Crus	hing		
November	1	150	59	0	0	2	33	6	14	0
December	1	265	200	0	0	No	Crus	hing		
1912										
January	1	86	39	5	0	No	Crus	hing		
February	1	240	127	4	0	No	Crus	hing		
March	1	180	104	0	0	1	80	20	16	0
April	1	287	126	5	0	2	90	50	12	0
May	1	325	66	0	0	2	90	29	2	0
June	1	310	133	15	0	2	21	20	1	0
July	1	320	80	0	0	No	Crus	hing		
August	1	300	70	0	0	No	Crus	ling		
Setpember	1	170	77	0	0	No	Crus	hing		
Total	......	2908	1182	11	0	......	314	127	5	0

MONTHLY STATEMENT FOR EACH GOLD DISTRICT.

	OTHER DISTRICTS.										
MONTH.	No. of Mines	Tons Crushed	Yield of Gold.			DISTRICT	No. of Mines	Tons Crushed	Yield of Gold.		
			oz.	dwt	grs.				oz.	dwt.	grs.
1911						Beaver Dam	1	99	59	10	0
October	3	73	27	2	0	Carleton	1	10	1	0	0
November	1	90	41	0	0	Fifteen Mile Brook	1	225	21	1	5
December	2	578	31	9	10	Gold River	2	36	27	3	0
1912						Lawrencetown	[Mort	ared]	1	7	0
January	3	178	90	14	16	Pleasant River Barrens	1	30	12	0	0
February	1	72	21	0	0	Shiers Point	1	171	69	10	0
March	No	Crus	hing			Uniacke	1	10	......	2	0
April	2	90	37	10	0	Harrigan Cove	[Mort	ared]	2	10	0
May	3	46	27	0	0	Lake Catcha	1	1572	161	19	2
June	2	11	5	13	0						
July	2	637	50	6	5						
August	1	3	0	7	0						
September	1	375	24	0	0						
Totals	......	2153	356	2	7	Totals	......	2153	356	2	7